IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
MARSHALL DIVISION

LEXOS MEDIA IP, LLC V. NIKE, INC.,	Case No.: 2:22-cv-00311-JRG (Lead Case)
LEXOS MEDIA IP, LLC V. ULTA, INC.,	Case No.: 2:22-cv-00299-JRG (Member Case)
LEXOS MEDIA IP, LLC V. THE GAP, INC.,	Case No.: 2:22-cv-00299-JRG (Member Case)
LEXOS MEDIA IP, LLC V. WALMART, INC., *et al.*	Case No.: 2:22-CV-00316-JRG (Member Case)

REBUTTAL REPORT OF DR. MICHAEL IAN SHAMOS, PH.D., J.D TO DR. HENRY HOUH'S REPORT CONCERNING THE VALIDITY OF U.S. PATENT NOS. 5,995,102, 6,118,449, AND 7,975,241

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I. INTRODUCTION

1. My name is Michael Ian Shamos.

2. I have been retained by Plaintiff Lexos Media IP, LLC ("LEXOS") to offer my opinion whether of claim 72 of U.S. Patent 5,995,102 (the "'102 Patent"), claims 1, 38, and 53 of U.S. Patent 6,119,449 (the "'449 Patent"), and claim 35 of U.S. Patent 7,975,241 (the "'241 Patent") (collectively, the "Asserted Claims") are valid over the asserted Prior Art, and to respond to other invalidity assertions presented by Nike, Inc., Ulta Beauty, Inc., The Gap, Inc. and Walmart, Inc. et al. (collectively, "Defendants").

3. More specifically, I have been asked to respond to the "Opening Expert Report of Dr. Henry Houh," dated December 18, 2023 ("Houh Report") and the "Opening Expert Report of Mr. Glenn E. Weadock Regarding Invalidity of U.S. Patent Nos. 5,995,102, 6,118,449 and 7,975,241," also dated December 18, 2023 ("Weadock Report"). I have been informed by counsel that Lexos Media and Ulta Beauty, Inc. have recently filed a joint motion to stay in light of a settlement being reached, but I respond to the entire Opening Expert Report of Dr. Henry Houh for the sake of completeness.

4. I am being compensated at my usual consulting rate of $600 per hour for my work related to this matter. My compensation does not depend on the contents of this report, any testimony I may provide, or the ultimate outcome of this matter. I do not have any direct financial interest in Plaintiff. It is conceivable that I may own mutual funds or investment accounts which themselves own shares of one or more Defendants. However, any such holdings collectively would not constitute a material portion of my net worth.

5. I reserve the right to supplement and/or amend my opinions in this report based on future positions taken by Defendants, their experts, additional documents, testimony, or other

information provided by Defendants or their witnesses, any orders from the Court, or as otherwise necessary.

6. My opinions and the bases for my opinions are provided in this Report and Exhibits attached hereto. If I am called as a witness in the above-captioned litigation, I expect that I would testify at trial regarding the matters expressed in this Report and any supplemental reports or declarations that I may prepare in connection with this litigation. I may also discuss work and publications in the field, and knowledge of the state of the art in the relevant time period. I may rely on handbooks, textbooks, technical literature, and the like to demonstrate the state of the art in the relevant time period and the evolution of relevant technologies. I expect that I may also testify to additional matters. These include, for example, matters addressed by the Defendants' experts or by their counsel.

7. When I say I "understand" a fact to be true or make a factual statement without a documentary citation that means I have been informed by counsel for Plaintiff that Plaintiff will provide proof at trial of such fact through admitted evidence. When I say that I "understand" a particular principle of law to be applicable, that means I have been informed by counsel for Plaintiff that I am to apply such principle of law.

8. In connection with my anticipated testimony, I may use as exhibits various documents produced in this case or publicly available that refer or relate to the matters discussed in this Report. I have not yet selected the particular exhibits that might be used.

9. In addition, I may create or assist in the creation of demonstrative evidence to assist me in testifying. For instance, at trial I may rely on software cited in this Report or compiled versions of related source code in order to illustrate the relevant functionality of those programs and aid the jury in their understanding of those programs. I may prepare static and/or animated

exhibits that demonstrate Defendants' websites or show a video depicting their use. I may also rely on screen shots or documents to generate demonstratives showing how such websites operate. The Asserted Patents relate to certain technology, and I may prepare demonstrative exhibits describing how that technology operates.

10. I currently hold the title of Distinguished Career Professor in the School of Computer Science at Carnegie Mellon University in Pittsburgh, Pennsylvania. I am a member of two departments in that School, the Software and Societal Systems Department and the Language Technologies Institute. I was a founder and Co-Director of the Institute for eCommerce at Carnegie Mellon from 1998-2004 and from 2004-2018 was Director of the eBusiness Technology graduate program in the Carnegie Mellon University School of Computer Science. Since 2018, I have been Director of the M.S. in Artificial Intelligence and Innovation degree program at Carnegie Mellon.

11. I received an A.B. (1968) from Princeton University in Physics; an M.A. (1970) from Vassar College in Physics; an M.S. (1972) from American University in Technology of Management, a field that covers quantitative tools used in managing organizations, such as statistics, operations research and cost-benefit analysis; an M.S. (1973), and M.Phil. (1974) and a Ph.D. from Yale University in Computer Science; and a J.D. (1981) from Duquesne University.

12. I have taught graduate courses at Carnegie Mellon in Electronic Commerce, including eCommerce Technology, Electronic Payment Systems, Electronic Voting, Internet of Things, Electronic Payment Systems and eCommerce Law and Regulation, as well as Analysis of Algorithms. Since 2007 I have taught an annual course in Law of Computer Technology. I currently also teach Artificial Intelligence and Future Markets.

13. I am the author and lecturer in a 24-hour video course on Internet protocols and have taught computer networking, wireless communication, and Internet architecture since 1999.

14. From 2001-2021, I was a Visiting Professor at the University of Hong Kong, where I taught an annual course in Electronic Payment systems. This is one of only a handful of graduate courses taught on this subject in the world.

15. From 1979-1987 I was the founder and president of two computer software development companies in Pittsburgh, Pennsylvania, Unilogic, Ltd. and Lexeme Corporation.

16. I am an attorney admitted to practice in Pennsylvania and have been admitted to the Bar of the U.S. Patent and Trademark Office since 1981. I have not been asked to offer any opinions on patent law in this proceeding.

17. I am a named co-inventor on the following six issued patents relating to electronic commerce: U.S. Patent Nos. 7,330,839, 7,421,278, 7,747,465, 8,195,197, 8,280,773, and 9,456,299.

18. I have previously served as an expert in over 370 cases concerning computer technology. In particular, I have been involved in multiple cases involving Internet technology and delivery of content over the Internet. A current copy of my curriculum vitae setting forth details of my background and relevant experience, including a full list of my relevant publications and a listing of cases for which I have provided expert testimony is attached hereto as Exhibit A.

19. In performing my analysis I have relied upon the materials listed in Exhibit B.

II. SUMMARY OF OPINIONS

20. My opinions are set forth in the body of this Report and in the Exhibits that I have prepared and attached to this Report. Without intending to limit in any way the opinions expressed in this Report, the following is a summary of my opinions.

21. The Asserted Claims are not invalid for any of the reasons asserted by Dr. Houh.

22. The Asserted Claims are not anticipated by Adveractive's Fearless Fergie Mouse Game.

23. The Asserted Claims are not invalid for obviousness over the Adveractive's Brunswick Cosmic Bowling Game.

24. The Asserted Claims are not invalid for obviousness in view of Malamud.

25. The Asserted Claims are not invalid for obviousness over Nielsen and Malamud.

26. The Asserted Claims are not invalid for obviousness in view of Nielsen and Hama.

27. The Asserted Claims are not invalid for obviousness in view of Kojima.

28. Claim 35 of the '241 Patent is not invalid for obviousness in view of Rakavy.

29. Claim 35 of the '241 Patent is not invalid for obviousness in view of Hama.

30. Claim 35 of the '241 Patent is not anticipated by the '102 Patent.

31. The Asserted Claims are not invalid for lack of written description.

32. There are secondary considerations of non-obviousness.

III. OVERVIEW OF THE ASSERTED PATENTS

A. '102 Patent

33. The '102 Patent is entitled "Server System and Method for Modifying a Cursor Image." It was filed on June 25, 1997.

34. The ’102 Patent relates generally to computer display cursors. More specifically, the invention discloses sending code from a server to a client to modify the appearance of a display cursor on the client.

35. The ’102 Patent names James Samuel Rosen, Thomas A. Schmitter, and Mark S. Hall as the inventors. The records of the United States Patent and Trademark Office (“PTO”) show that the patent was assigned to Plaintiff by an instrument executed on January 15, 2013 and recorded in the PTO on March 19, 2013.

36. The ’102 Patent expired on June 25, 2017.

B. ’449 Patent

37. The ’449 Patent is entitled “Server System and Method for Modifying a Cursor Image.” It was filed on September 21, 1999 as a continuation of the application that became the ’102 Patent and was therefore effectively filed on June 25, 1997.

38. The ’449 Patent shares the same specification as the ’102 Patent, so it relates to the same field.

39. The ’449 Patent also names James Samuel Rosen, Thomas A. Schmitter, and Mark S. Hall as the inventors. The records of the PTO show that the patent was assigned to Plaintiff by an instrument executed on January 15, 2013 and recorded in the PTO on March 19, 2013.

40. Because of the terminal disclaimer, the ’449 Patent expired on the same day as the ’102 Patent, that is, June 25, 2017.

C. ’241 Patent

41. The ’241 Patent is entitled “System for Replacing a Cursor Image in Connection with Displaying the Contents of a Webpage.” It was filed on January 21, 2005 and published on September 29, 2005.

42. The ’241 Patent names James Samuel Rosen, Thomas A. Schmitter, and Mark S. Hall as the inventors. The records of the PTO show that the patent was assigned to Plaintiff by an instrument executed on January 15, 2013 and recorded in the PTO on March 19, 2013.

43. The ’241 Patent issued on July 5, 2011. The ’241 Patent term was extended by 1175 days. It expired on September 12, 2020.

44. Dr. Houh states that he “understand[s] June 21, 2005 to be the priority date for the ’241 patent.” Houh Report at ¶ 73. I understand the ’241 Patent to claim priority to the ’102 Patent, making its priority date June 25, 1997. I further understand that there is a dispute between the parties of the significance of a claim of priority that appears in the prosecution history of the ’241 Patent but does not appear in the printed patent itself, which I understand to be a matter of law.

D. Brief Overview of the Common Specification

45. The Asserted Patents in this consolidated litigation are: (1) U.S. Patent No. 5,994,102, (2) U.S. Patent No. 6,118,449, both of which are entitled “Server System and Method of Modifying a Cursor Image,” and (3) U.S. Patent No. 7,975,241, entitled “System for Replacing a Cursor Image In Connection with Displaying the Contents of a Webpage”. Each of the Asserted Patents shares the same specification (“Common Specification”). The application for the ’102 Patent was filed on June 25, 1997. For ease of reference, patent citations to the Common Specification will be with reference to the column and line numbering of the ’102 Patent.

46. At the time of the invention, more and more companies were advertising on the Internet. ’102 Patent, 1:21-23. Three typical forms of advertising at the time of the invention were “banner ads,” 1:24-25, “frames,” 1:55-56, and “self-appearing windows.” 2:4-5. Each

form of advertising had its drawbacks and limitations, as explained in the specification. 1:24-2:32. Consequently, the inventors recognized "a need for a simple means to deliver advertising elements . . . without the annoyance of totally interrupting and intrusive content delivery, and without the passiveness of ordinary banner and frame advertisements which can be easily ignored." 2:27-32. Thus, it was a specific objective of the inventions "to provide a server system for modifying a cursor image to a specific image displayed on a video monitor of a remote user's terminal for the purposes of providing on-screen advertising." 2:44-47.

47. The claimed inventions provide for server systems that enable a cursor or pointer displayed on a remote client's computer to change its appearance to a "specific image" that is representative of the content being displayed on that client computer. 4:4-12. The modified cursor image can be used by the provider of displayed web content to advertise or promote the displayed content. 3:51-4:3. As the Common Specification explains, "[t]he present invention provides a means for enabling cursors and pointers to change color, shape, appearance, make sounds, display animation, etc., when the user's terminal or computer, known as the 'client' or 'user' terminal, which has a network connection, receives certain instructions from a remote or 'server' computer attached to the network." 3:51-57.

48. The Common Specification describes "an exemplary embodiment of the present invention" whereby:

> [T]he generic cursor or pointer icons used in many networking applications, such as black arrows, hands with a pointing finger, spinning wheels, hourglasses, wristwatches, and others, will change appearance, and in some cases may incorporate sound or animation, in a way that is linked and related to the content, such as a webpage, which is being transmitted to and displayed on the client computer.

`102 Patent, 3:57-64.

49. "The cursor or pointer image may also appear in a specified shape or color that is intended to convey a message that relates to the advertising content within the webpage being transmitted and displayed." 3:67-4:3. See also 7:2-5 ("the server system provides certain information that causes the cursor image on the video monitor of the user terminal to display an image as specified by the server system.").

50. The invention relates to a graphical user interface in which a pointing device is used by the user to navigate a video display, and in which movement of the pointing device is indicated by a corresponding movement of a cursor on the video display. 8:24–37. The '102 Patent relates to changing that generic cursor by sending data and control signals from a remote computer to replace such a cursor with a cursor having an shape and appearance that is associated with other content being displayed to the user, e.g., a logo, mascot, or an image of a product or service, related to the other content being displayed to the user. 3:4–9, 17:5–18:3.

51. Figure 8 of the Common Specification, reproduced below, shows a webpage according to the invention.

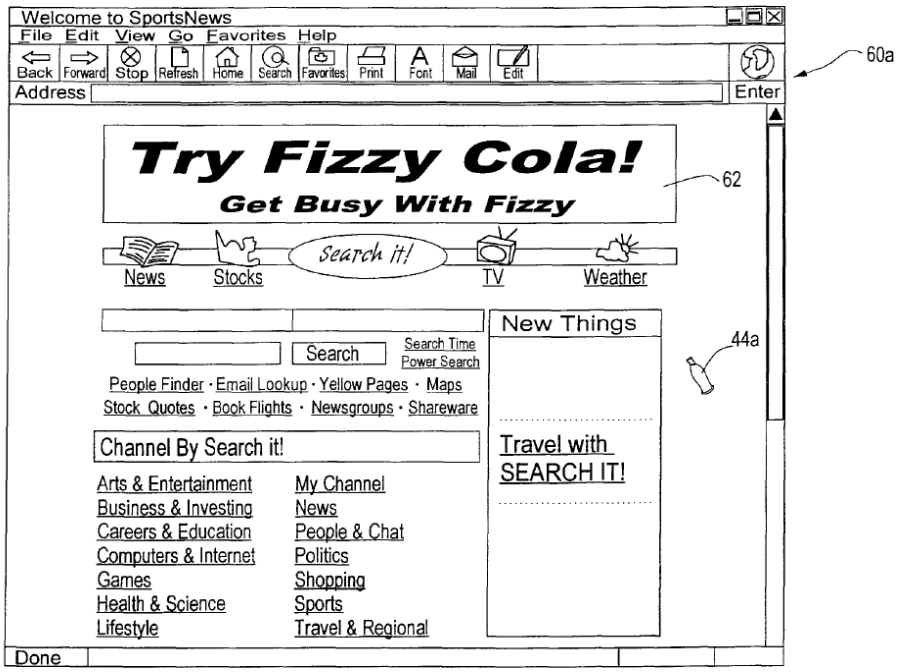


FIG. 8

52. In Figure 8, shown above, webpage 60a is displayed to a user, including banner ad 62 for cola. Id. at 13:31–37. The cursor on this webpage changes from a standard cursor (e.g., an arrow) to cola-bottle-shaped cursor 44a, which is associated with banner ad 62. Id. The '102 Patent describes interactions between a server system and a user's terminal to effect the cursor change. Id. at 4:4–9, 5:37–49, 5:48–65, 7:16–40. The user terminal is controlled by an operating system ("OS"), and application programs, such as a browser running on the user terminal, use an application programming interface ("API") to interface with the OS. Id. at 7:29-40, Fig. 2.

53. The server system transmits specified content information to the user terminal, including information to be displayed on the user's computer (such as a hypertext markup language ("HTML") webpage), cursor display instructions, and cursor display code. 8:4–23. The cursor display instructions indicate where the cursor image data corresponding to the new appearance of the cursor resides. 8:49–64. The cursor display code causes the user's terminal to display cursor image data in place of the original cursor, using the API of the operating system to effect these changes. 8:34–37, 8:52–57; 13:19–30.

54. As extensively described in the Common Specification, e.g. 7:41-14:64, when a browser requests a webpage from a server, it receives back an HTML file that includes content to displayed and/or pointers thereto, formatting instructions on how to display the content, and instructions and/or code specifying how the webpage is to interact with the user, including how the cursor modification takes place and specific images are displayed. The browser then uses the received information to generate the webpage displayed to the user, including the shape and appearance of the modified cursor image.

55. As the Common Specification also describes, the content of the specific image may be dynamically updated and may also change based upon cursor movement, according, e.g., to changes in its position or speed. 14:49-53 ("…it is possible to vary the modification to the cursor as a function of cursor position. For example, the cursor pointer could be controlled such that it 'points' to a specific location on the screen regardless of the cursor's location on the screen as illustrated in line 214 of FIG 4."); 14:54-64 ("In accordance with another embodiment of the invention it is possible to vary the modification to the cursor as a function of cursor velocity. For example, the cursor image could change from a stationary bird to a bird with flapping wings only when the cursor is moved quickly across the screen as illustrated in line 215 of FIG. 4."); 17:17-21 ("A dynamic cursor image could then be used to show a person holding a straw in such a way that the straw always points from the user toward the top of the Fizzy bottle, no matter where the cursor moves on the screen."); 17:55-61 ("It may also be desirable in certain cases to put alphanumeric data in the cursor 'space' to convey information to users, such as stock prices, baseball game scores, the temperature in Florida, etc. The data can be static, semi-static (i.e. updated periodically), or dynamic (updated frequently -- possibly incorporating available streaming-data and data compression technologies.")

56. The specification also describes that the cursor modification can also incorporate satellite images that are spaced apart from the modified cursor image and also track its movement. For example, in describing one exemplary embodiment, the Common Specification states at 17:17-31:

> "A dynamic cursor image could then be used to show a person holding a straw in such a way that the straw always points from the user toward the top of the Fizzy bottle, no

> matter where the cursor moves on the screen. The straw, in this case, might be "attached" to the cursor image (part of the same image) or could be separate, "satellite" image, a "sprite," whose movement on the screen (in this case) is related to the movement of the cursor. Sprites, which can appear and disappear as desired, can enhance the invention by enabling the use of graphical elements which are associated with the cursor but which reside outside the limited cursor "space" (which in some systems may be, at maximum, 32 by 32 pixels). For the purposes of the invention, however, there should be no limitation to the size of the cursor."

57. This teaching of non-traditional cursor images is reinforced throughout the specification used for promotional purposes is reinforced throughout the specification. For example, Cursor Display Instructions that include parameters that control the type of cursor image for the modification, how long the changed image should remain before reverting, its trajectory path, where it should change based upon its screen location and what satellite images should be used that track its movement. 9:39-65.

E. Benefits of the Patents

58. In this analysis, I focus specifically on the benefits of the 5,995,102, 6,118,449 and 7,975,241 patents to Internet retailers, not on their general benefits.

59. The Patents claim various systems and methods that address problems in online advertising, namely that banner ads are easily ignored (1:41-54), webpage frames cause

cramping and reduced content space (1:55-2:3), and pop-up windows are easily obscured, closed or ignored (2:4-26). The patents solve these problems via objectives described at 2:37-3:50.

60. The inventors recognized that content associated with a cursor is not easily ignored because the cursor is a user's pointing device and the user's eyes tend to follow the cursor. A basic idea of the inventions is to change the appearance of the cursor based on the content it is pointing to. 3:51-4:3. The change in appearance can alter the size, shape, color, text or image associated with the cursor.

61. Major outlets for Internet advertising are product webpages of Internet retailers, such as Defendants. An objective of a product page is to induce the viewer to buy the product. This was commonly done by providing color images of the product, textual descriptions, product specifications, and customer testimonials. Of these, images are the most captivating and effective because customers are reluctant to buy a product they have not been able to view.

62. It was known to allow a user to click on an image to view a magnified image of the product, then click again to restore the image to its original size. This is useful but somewhat clumsy, as it involves a lot of mouse clicking. The inventors provide this solution: mere movement of the mouse over a portion of page content results in an image associated with that content to be displayed along with the cursor as the cursor moves. 9:1-20. In this way, the user can move the cursor over an image of a product and view, for example, an expanded image of the relevant portion of the product as an associated image.

63. This cursor modification invention is very effective, as can be seen by the layperson viewing a Defendant's webpage.

64. Thus, the Asserted Patents disclose and enable systems and methods in which cursor images are dynamically modified for promotional and advertising purposes. In the ’102 and ’449 Patents, the specific shape and appearance of the modified cursor image corresponds to other content being displayed on the webpage to promote that content. In the ’241 patent, the modified cursor image includes a dynamic visual image that tracks movement. The various examples disclosed in the Patents of promotional cursors include images that dynamically update with the cursors’ movements, including associated images that are not integrated with the modified cursor image but which also track a movement.

IV. LEGAL PRINCIPLES AND STANDARDS

65. I have been informed by counsel for Plaintiff that the following principles of law are applicable to this matter, and I have applied these principles in my analysis.

66. I understand that a patent may be granted for any “new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof…” 35 U.S.C. § 101.

67. I understand that the claims of an issued U.S. Patent are presumed to be valid and enforceable. I understand that this presumption applies despite Defendants’ invalidity theories, including anticipation, obviousness and other assertions of invalidity.

68. I understand that the party challenging the validity of a claim of an issued United States patent bears the burden of proof by clear and convincing evidence to demonstrate that such claim is invalid.

69. I understand that a patent must contain a written description of the subject matter claimed in the patent. To satisfy the written description requirement, the patent must describe the invention with reasonable clarity to convey to those skilled in the art that the inventor was

in possession of the invention as of the date the application was filed. The written description requirement is evaluated as of the date the application for the patent was filed.

70. I understand that, in order to anticipate an invention, a prior art reference must be enabling to one of ordinary skill in the art. I understand that to prove that a patent is invalid for lack of enablement, one must show that the patent does not contain a description of the claimed invention that, at the time the patent application was filed, would have enabled a person of ordinary skill in the art to make and use the invention without undue experimentation.

71. I understand that a patent is enabling if a person of ordinary skill in the field could make and use the invention without having to do excessive experimentation. In determining whether excessive experimentation is required, a number of factors can be considered: the scope of the claimed invention; the level of ordinary skill in the field; the amount of guidance presented in the patent; the amount of experimentation necessary; the time and cost of any necessary experimentation; how routine any necessary experimentation is; and whether the patent discloses specific working examples of the claimed invention.

72. I understand that an application for a patent may claim priority to an earlier filed application. 35 U.S.C. § 120. The effective priority date is important to determining whether or not a reference constitutes prior art. Art that comes after the priority date is not considered prior art for purposes of evaluating novelty or nonobviousness. 35 U.S.C. §§ 102, 103.

73. I have been advised that 35 U.S.C. § 101 defines patent-eligible subject matter to include "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."

74. I have been advised that, because the presumption of validity applies to patent eligibility, Defendant bears the burden of proving ineligibility by clear and convincing evidence.

75. I have been advised that, traditionally, courts have interpreted § 101 broadly to include "anything under the sun that is made by man." However, I have also been advised that the Supreme Court has narrowly recognized three specific exceptions to § 101's broad patent-eligibility principles: i.e., "laws of nature, physical phenomena, and abstract ideas."

76. I have been advised that, in Alice Corp. Pty. Ltd. v. CLS Bank Int'l, 34 S. Ct. 2347 (2014) and Mayo Collaborative Services v. Prometheus Laboratories, Inc. 132 S. Ct. 1289 (2012), the Supreme Court established a two-part test to determine whether a claim is patent-eligible. I understand that this test is referred to as the "Alice test."

77. I have been advised that, in Step One of the Alice test, the court must determine whether the claims are "directed to" a patent-ineligible concept - here, an "abstract idea." I have been advised that, if the Court determines that the claims are not "directed to" an abstract idea in Step One, the inquiry ends, and the claims are held to be patent-eligible.

78. I have been advised that, in determining whether the claims are "directed to" an abstract idea, the court must consider all the language of each claim, as properly construed. I have been advised that the abstract-idea's exception does not apply if the claimed invention "solves a technological problem in conventional industry practice," "improves an existing technological process," or "effect[s] an improvement in any other technology or technical field."

79. I have been advised that, according to a recent Federal Circuit case, the "relevant inquiry" under Alice Step One is "whether the claims focus on a specific means or method that

improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea." I have been advised that, if a claim recites a mere desired "result or effect," it may be ineligible as "abstract;" but, if it recites the "specific means or method" that achieves the result or effect, it is not abstract.

80. I have been advised that, if a claim is found to be "directed to" an abstract idea in Step One, the inquiry proceeds to Step Two. I have been advised that, in Step Two, courts conduct a search for an "inventive concept" - i.e., an element or combination of elements that is sufficient to ensure that the patent in practice amounts to "significantly more" than a patent upon the ineligible concept itself. I have been advised that, in this step, the court must consider all the elements of each claim, both individually and "as an ordered combination," to determine whether the claim elements transform the nature of the claim into a patent-eligible "application" of the abstract idea, rather than a mere recitation of the abstract idea itself.

81. I have been advised that Step Two of the Alice test is satisfied when the claim elements, alone or in combination, recite more than "well-understood, routine, conventional activities." I have been advised that whether a particular claim element, or combination of elements, represents "well-understood, routine, conventional activities" is a question of fact. I have been advised that Defendants bear the burden of proving that the claims recite "well-understood, routine, conventional activity" by clear and convincing evidence.

82. I understand that a prior art reference anticipates a claim only if it, and it alone, discloses each and every limitation of the claim (as properly construed) at issue. In other words, every limitation of a claim must identically appear in a single prior art reference, arranged as in the claim.

83. Section 102 defines what qualifies as prior art for the purposes of an anticipation analysis as well as a non-obviousness analysis under 35 U.S.C. § 103.

84. I understand that, to invalidate a claim, a reference must be prior art to the claim and that the defendant has the burden to prove that a reference meets the requirements to qualify as prior art.

85. I understand that, in order to be considered a "printed publication," a document must be generally available—that is, available to the public without restriction. I have been informed that the dissemination and public accessibility of a document are the keys to the legal determination whether or not that document was "published" and hence can serve as prior art to a patent.

86. I understand that a patent claim cannot be invalidated based on one person's testimony alone without corroborating evidence, particularly documentary evidence. Moreover, I understand that corroboration is required of any witness whose testimony alone is asserted to invalidate a patent claim, regardless of his or her level of interest in relation to that patent.

87. I understand that a claim is invalid if the claimed invention (pre- AIA) was known or used by others in the U.S. before the applicant's date of invention. I understand that a claim is invalid if the invention was patented or published anywhere, or was in public use, on sale, or offered for sale in this country, more than one year prior to the filing date of the patent application. I understand that a claim is invalid if the invention described by that claim was described in a U.S. patent granted on an application for a patent by another that was filed in the U.S. before the date of invention for that claim.

88. I understand that for a reference, other than a patent, to constitute prior art under § 102(a), the reference must have been published before the invention by the applicant for the patent. I understand that, for a system to constitute prior art under § 102(a), the system must have been known or used by others in the United States before the invention by the applicant for the patent.

89. I understand that prior use under § 102(a) must be of a complete product or process actually reduced to practice. An experiment that falls short of reduction to practice or is abandoned is not sufficient. I understand that the prior use must be accessible to the public. A use under conditions of secrecy is not sufficient. I understand that a prior use must be established by clear and convincing evidence and that oral testimony as to a prior use must normally be corroborated by other evidence.

90. I understand that prior knowledge under § 102(a) must consist of a complete and adequate description of the product or process that is available to the public. I understand that private or secret knowledge will not anticipate or constitute prior art.

91. I understand that, for a reference, other than a patent, to constitute prior art under § 102(b), the reference must have been published more than one year before the date of the application for the patent in the United States. I understand that, for a system to constitute prior art under § 102(b), the system must have been in public use or on sale in the United States more than one year prior to the date of the application for the patent in the United States.

92. I understand that public use under § 102(b) includes any use of the invention by a person other than the inventor who is under no limitation, restriction, or obligation of secrecy to the inventor. I understand that a secret use by persons other than the inventor does not constitute a statutory bar under § 102(b).

93. I understand that the inventor's own public disclosure of his invention more than one year prior to filing of the patent application can also invalidate his patent under § 102(b).

94. I understand that a claimed invention is unpatentable if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. 35 U.S.C. § 103.

95. I understand that the factual analysis relevant to obviousness requires that the following four inquiries be made: (1) the scope and content of the prior art are to be determined; (2) the differences between the prior art and the claims at issue are to be ascertained; (3) the level of ordinary skill in the art are resolved; and (4) objective indicia of obviousness or nonobviousness, which include "secondary considerations" such as the commercial success of the invention, long felt but unsolved needs, unexpected results, and the failure of others to arrive at the invention, are to be considered. I understand that these four factors are sometimes referred to as the Graham factors.

96. I understand that mere identification in the prior art of each component of a claimed system does not show that the claim as a whole would have been obvious.

97. I understand that obviousness can be based on a combination of multiple prior art references. I also understand that a claim can be obvious in light of a single reference, without the need to combine references, if the elements of the claim that are not found explicitly or inherently in the single reference, if the missing limitation(s) can be supplied by the knowledge of one skilled in the art, including the common sense of one of skill in the art. I also understand that "hindsight reconstruction" cannot be used to combine references together to reach a conclusion of obviousness. However, where only a single reference is combined with the

"common sense" knowledge of one skilled in the art, a reasoned analysis and evidentiary support is required as opposed to a bare assertion, as will be discussed below.

98. I understand that the Supreme Court addressed the obviousness standard in KSR Int'l Co. v. Teleflex, Inc., 550 U.S. 398 (2007) in which the Court elaborated on the framework for analyzing obviousness it had set forth in previous cases. I understand that in KSR, the Supreme Court rejected the Federal Circuit's rigid application of the teaching, suggestion, or motivation ("TSM") test for obviousness, that is, some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. Nevertheless, TSM remains as a rationale to support a conclusion of obviousness.

99. I understand that KSR recognized other rationales that may be used to justify the conclusion of obviousness, in addition to the TSM test, including at least the following:

> (a) combining prior art elements according to known methods to yield predictable results (KSR at 1731);
>
> (b) simple substitution of one known element for another to obtain predictable results (KSR at 1731);
>
> (c) use of known techniques to improve similar devices (methods, or products) in the same way (KSR at 1731);
>
> (d) "obvious to try" in the narrow circumstances "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions" (KSR at 1742);
>
> (e) known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art (KSR at 1461); and
>
> (f) recourse to "common sense," provided that where there is an identifiable "reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" (KSR

at 1741). As will be noted below, the bare assertion of "common sense" to modify a single reference is not enough. The Federal Circuit requires more than the bare assertion. See, e.g., DSS Technology Management, Inc. v. Apple, 885 F. 3d 1367, 1374 (Fed. Cir. 2018).

100. I understand that, if a single reference is missing a limitation but that limitation allegedly being supplied by obviousness, particular care must be taken to avoid hindsight bias. Indeed, the Federal Circuit explained in this connection that there are additional showings that must be made other than simply an allegation of "common sense" to supply the missing limitation:

101. I understand that it is improper to combine references from non-analogous arts.

102. I understand that two criteria are relevant in determining whether prior art references are in analogous arts: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference is still reasonably pertinent to the particular problem with which the inventor is involved.

103. I understand that, if the teachings of a prior art reference would lead one skilled in the art to make a modification that would render another prior art device inoperable, then such a modification would generally not be obvious. I understand that if a proposed modification would render the prior art device unsatisfactory for its intended purpose, then the proposed modification would generally not be obvious. I understand that if a combination would violate the principle of operation of one of the combined references, the combination is not motivated.

104. I understand that it is improper to combine references if the references teach away from their combination. I understand that a reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path

set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.

105. I understand that the degree of teaching away will depend on the particular facts. In general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant. I understand that a reference teaches away, for example, if (1) the combination would produce a seemingly inoperative device, or (2) the references leave the impression that the product would not have the property sought by the applicant.

106. I understand that one must consider whether or not there is objective evidence of non-obviousness, which is also referred to as "secondary considerations of non-obviousness." I understand that courts have considered the following secondary considerations in determining obviousness: (1) the invention's commercial success, (2) long felt but unresolved needs, (3) the failure of others, (4) skepticism by experts, (5) praise by others, (6) teaching away by others, (7) recognition of a problem, (8) copying of the invention by competitors, (9) licensing or acquiescence, and (10) other relevant factors.

A. Claim Construction

107. In rendering my opinion, I have applied the constructions of claim terms agreed to by the parties and the constructions determined by the Court. (Dkt. 187, Claim Construction Order). For each other claim term, I have applied the plain and ordinary meaning of the term as would be understood by a person of ordinary skill in the art ("POSITA") at the time of the claimed invention, where appropriate, in light of the intrinsic evidence.

108. The agreed claim constructions are as follows:

Claim Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
"**cursor image data**" `102 Patent, Claim 72; `449 Patent, Claims 1, 27, and 53.	**[Agreed]**	**[Agreed]**	Plain and ordinary meaning.
"**modifying**" / "**transforming**" [said cursor image/ initial cursor image] (including "**modify** [said cursor image]" and "**modifying** [a cursor image]") '102 Patent, Claim 72; '449 Patent, Claim 27, 53; '241 Patent, Claim 35.	**[Agreed]**	**[Agreed]**	Plain and ordinary meaning. -*Amazon* Claim Construction Order
"**said specific image includes/including content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal**" '102 Patent: Claim 72. '449 Patent: Claims 1, 27, 53.	**[Agreed]**	**[Agreed]**	"an image representative of at least a portion of the subject or topic being displayed on the screen." *Lexos Media IP, LLC v. APMEX, Inc*., Case No. 2:16-cv-00747-JRG-RSP, 2017 WL 1021366 at *5-6 (E.D. Tex. Mar. 16, 2017) (ECF Nos. 86, 91).

"**server**" (computer or system) `102 Patent, Claim 72; `449 Patent, Claims 1, 38, 53; '241 Patent, Claim 35.	**[Agreed]**	**[Agreed]**	Plain and ordinary meaning.
"**specified content information**" `102 Patent, Claim 72; `449 Patent, Claims 1, 38 and 53. "**content information**" `241 Patent, Claim 35.	**[Agreed]**	**[Agreed]**	The term "specified content information"/"content information" means "information provided to a user's terminal for use in the display, such as a web page."
"**promotional material**" '241 Patent, Claim 35.	**[Agreed]**	**[Agreed]**	Plain and ordinary meaning. Subject to the printed-matter doctrine and not entitled to patentable weight. -*Amazon* Claim Construction Order

109. The Court's claim constructions are as follows:

Claim Term	The Court's Construction
"corresponding to" as used in the phrase "cursor image data corresponding to a/said specific image" ('102 Patent, Claim 72; '449 Patent, Claims 1, 5, 38, 53)	Plain and ordinary meaning

"cursor display code" ('102 Patent, Claim 72; '449 Patent, Claims 1, 5, 38, 53)	"computer code for modifying the display of the cursor image"
"cursor display instruction" ('102 Patent, Claim 72; '449 Patent, Claims 1, 38, 53; '241 Patent, Claim 35)	"an instruction operable to modify the display of a cursor image"
"cursor image," "initial cursor image," "modified cursor image" ('102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53; '241 Patent, Claim 35)	"cursor image": "a movable image on a display screen whose position can be controlled through a user interface and that indicates where user input can be received"
"following receipt of the content information" ('241 Patent, Claim 35)	Plain and ordinary meaning
"modified cursor image" ('449 Patent, Claims 1, 5, 38; '241 Patent, Claim 35)	"cursor image": "a movable image on a display screen whose position can be controlled through a user interface and that indicates where user input can be received"
"modifying"/"transforming" [said cursor image/initial cursor image] ('102 Patent, Claim 72; '449 Patent, Claim 38, 53; '241 Patent, Claim 35)	Plain and ordinary meaning
"promotional material" ('241 Patent, Claim 35)	Plain and ordinary meaning. Subject to the printed-matter doctrine and not entitled to patentable weight.
"specific image" ('102 Patent, Claim 72; '449 Patent, Claims 1, 5, 38, 53)	Plain and ordinary meaning
"tracks a movement" ('241 Patent, Claim 35)	Plain and ordinary meaning

"visual image" ('241 Patent, Claim 35)	Plain and ordinary meaning

B. Definition of the "Person of Ordinary Skill in the Art

110. The Patent Trial and Appeal Board ("PTAB"), in a related inter partes review ("IPR") proceeding, found that a person of ordinary skill in the art would have had "at least a master's degree in Computer Science, Computer Engineering, or a related field, or hold a bachelor's degree in Computer Science, Computer Engineering, or equivalent and have at least two years of relevant work experience in the fields of UI [(user interface)] design and OSs." Exhibit C at 10. I understand that Plaintiff does not dispute this finding regarding a person of ordinary skill in the art.

C. Level of Ordinary Skill in the Art for the Patents

111. The '102 Patent defines its field of invention as follows:

> *This invention relates to computer networks and software, and more particularly, to a server system capable of modifying a cursor image displayed on a remote client computer. '102 Patent, 1:5-7.*

112. The '449 Patent shares the same specification as the '102 Patent.

113. The claims of the '449 Patent are drawn to systems and methods for modifying cursors by sending instructions from a server to a client computer to enable the appearance of the cursor to depend on the content of a webpage being viewed. This necessarily requires familiarity with web technologies and user interfaces. The claims of the '449 Patent are so similar to those of the '102 Patent that the PTO required Applicants to submit a terminal disclaimer.

114. The field of the '241 Patent, expressed at 1:8-10, is identical to that of the '102 Patent.

115. The ’241 Patent shares the same specification as the ’102 Patent. The claims are patentably distinct from the claims in the ’102 Patent and the ’449 Patent but are in the same field.

116. It is my opinion that a POSITA, as of July 25, 1997, in order to read and understand the ’102 specification and to make and use the claimed inventions without undue experimentation, would have at least a bachelor’s degree in computer science, computer engineering, human factors engineering, or a related field and would have had at least two years of relevant work experience in the fields of UI design, or equivalent experience.

117. I believe the characterization of a POSITA accepted by the PTAB is a suitable one.

V. REVIEW OF DR. HENRY HOUH’S REPORT

A. Overview of the State of the Technology

118. Where relevant, the references asserted by Dr. Houh are responded to below in their respective sections, except for the following preliminary statements.

119. I note that Dr. Houh adopts the opinions of Craig Rosenberg in IPR 2023-1000 and IPR 2023-1001 brought by Amazon regarding, respectively, the ’102 and ’449 Patents. Hough Report at ¶ 29. My understanding is that these IPR proceedings are in the process of being dismissed due to a settlement between Amazon and Lexos. Nonetheless, I disagree with Mr. Rosenberg’s opinions for at least the reasons set forth in my declarations submitted in those IPR proceedings.

120. I also note that Dr. Houh discusses various prior art terms such as user interfaces, display drivers, custom cursors, tooltips, balloon help and client-server systems. Houh Report at ¶¶ 30-60. To the extent that any of that discussion is actually applied in an invalidity analysis of any specific limitation, I will address them as appropriate.

121. The Lee Patent is discussed by Dr. Houh at ¶¶ 63-65 but is never applied in any invalidity argument in the Houh's Report. Due to this apparent lack of relevance, I decline to offer an opinion concerning the accuracy of Dr. Houh's characterization of the Lee patent.

122. The Yanker Patent is discussed by Dr. Houh at ¶¶ 68-70 but is never applied in any invalidity argument in the Houh's Report. Due to this apparent lack of relevance, I decline to offer an opinion concerning the accuracy of Dr. Houh's characterization of the Yanker patent.

123. Regarding Dr. Houh's statements in his ¶ 106, I understand that the test for anticipation includes finding, within a prior art reference, the elements "arranged as in claim." Lacking this language, I cannot agree with Dr. Houh's understanding of anticipation under pre-AIA 35 U.S.C. § 102.

124. Regarding Dr. Houh's statements in his ¶ 107, I do not agree with Dr. Houh's characterization of the standard for inherency. I understand the legal standard for inherency requires that the element must necessarily be present, not merely possibly or probably present.

125. I note that many of the references relied upon by Dr. Houh for his invalidity arguments also appeared in the Expert Report of Dr. Terveen, and in the Expert Report of Mr. Goodin, for defendants in a related case. My opinions concerning those references, and their shortcomings with regards to invalidating the Asserted Claims, have not changed. My responses to the Dr. Terveen and Mr. Gooden Reports are incorporated by reference herein in their entirety. *See*, Exhibit D, the Terveen Rebuttal Report; Exhibit E the Goodin Rebuttal Report.

B. Adveractive's Fearless Fergie Mouse Game does not anticipate and/or render obvious any Asserted Claim.

126. I disagree with much of Dr. Houh's analysis of the Fearless Fergie bauble in ¶ 218. In particular, the cat head image becomes the modified cursor image itself – it is not a visual

image that "tracks a movement of the modified cursor image." The claim language requires an image that was not part of the modified cursor image to become an "included" image that tracks a movement of the modified cursor image. I do not see in Dr. Houh's analysis of Fearless Fergie any such visual image. I do agree with Dr. Houh that any changes in the cat head image track other dynamic conditions of the game (*e.g.*, the location of the rodent), but not the movement of the modified cursor image. *See, e.g.*, Houh Report at ¶ 217. ("This happens whether the cat's head is being moved horizontally by the user or not.")

127. I also disagree that there is clear and convincing evidence that the cat head is changed in response to being moved over any information to which it corresponds. I also disagree that the cat head is alone actually representative of the topic of the game—which is a fearless rodent.

128. Before moving onto the specific limitations of the Asserted Claims, I note that I agree with Dr. Houh that when the Court is referring to a cursor image that is "controlled through a user interface," this phrase refers to "gestures to control mouse movement."

'102 Patent, Claim 72

(a) **Limitation 72[Preamble] A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:**

129. I do not agree that Fearless Fergie necessarily meets this limitation because I understand that the software for the game in full is downloaded to a computer and subsequently run on that computer when the user desires and without need for further connection to a server. In other words, while the claim encompasses serving webpages, which requires the user terminal to be connected to at least one server, the Fearless Fergie game does not require such a connection or such server-client communication. Therefore, I disagree that Dr. Houh shows

clearly and convincingly this preamble is met in the description at Houh Report ¶ 128. I also disagree that his description at ¶¶ 128-129 shows clearly and convincingly that the cat head is a specific image that is triggered by moving the cursor over an image to which it corresponds, in meeting other claim limitations.

> (b) **Limitation 72[a]: receiving a request at said at least one server to provide specified content information to said user terminal**
>
> (c) **Limitation 72[b]: providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image,**

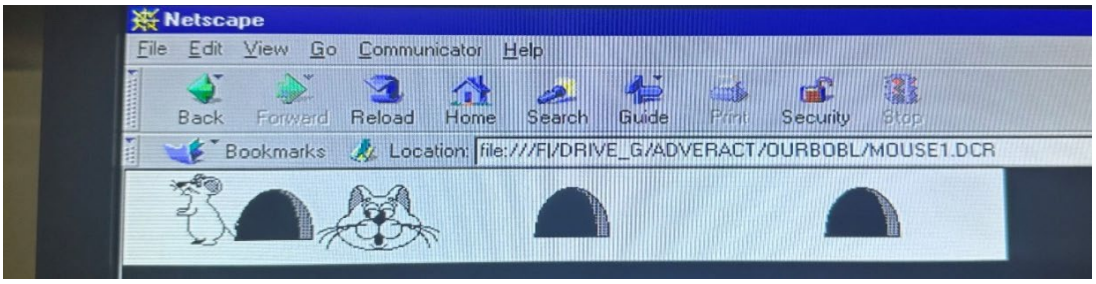
130. I do not agree that Fearless Fergie necessarily meets these limitations because I understand that the game software is downloaded in full from a webpage to a computer and then subsequently run on that computer when the user desires and without need for further connection to a server. In other words, while these claim elements encompass serving webpages through server connections, the Fearless Fergie game does not include such serving of a webpage. Rather, the user goes to a webpage and manually downloads the game. The user then later activates the game to play it. This will succeed whether or not the user is communicating with a server at the time the game is played. Therefore, I disagree that Dr. Houh shows clearly and convincingly that these elements are met in his description at ¶¶ 132-148 because these only show the downloading of a game that can then be played, or never played, at the user's option, in contrast to the claimed method.

> (d) **Limitation 72[c]: transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction,**

131. While I agree that "the system cursor changes to the cat head at the point when the cursor moves into sufficient proximity with the game that the cat head will being to appear within the game window defined by the EMBED tag" as Dr. Houh states at ¶ 151, I do not believe description shows this limitation is clearly and convincingly met because the cursor display instructions do not meet the requirements of 72[d] and 72[e], as I will further discuss particularly with respect to limitation 72[e].

> (e) **Limitation 72[d]: wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal, and**

132. I agree that the design elements of the bauble are the drawings of the mouse holes and various images of Fearless Fergie that comprise the information to be displayed. I also agree that the modified cursor images are various cat heads. However, I do not agree that the cat head alone is representative of a mouse hole or even Fearless Fergie. In particular, as shown below, and as Dr. Houh acknowledges, the information to be displayed consists of the three mouse holes and Fearless Fergie herself. The subject or topic of the "information to be displayed" is a rodent named Fearless Fergie and her living quarters, *i.e.*, rodent holes.



133. The cat head appears when the cursor is moved anywhere over the bauble's display field and the cat head is itself the modified cursor image. The only appearance of a cat is the modified cat head cursor itself. The claim requires that the shape and appearance of the modified cursor (the cat head) be representative of the information to be displayed. Of course,

the cat head is representative of itself, but that is not what the claim requires. In the same way that the modified cursor cannot track itself in the '241 Patent, the modified cat head cannot represent itself in the '102 or '449 Patent context. Since there is no other indication of a cat in any of the "information to be displayed," one cannot say that the cat head is representative of a "cat playing with, chasing, or being eaten by a mouse." Houh Rept. at ¶ 156. A cat head is not representative of a rodent (mouse) or a mouse hole, nor does Dr. Houh suggest that it is. I likewise disagree that the game text corresponds to a cat. Therefore, I do not agree that this claim limitation is met.

> (f) **Limitation 72[e]: wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal.**

134. As an initial matter, this limitation requires a cursor modification into the shape and appearance of the specific image in response to the movement of the cursor image over a "portion of said information to be displayed", which claim element 72[d] requires to be the content to which the specific image corresponds. The Fearless Fergie game does involve a cursor modification based upon movement, but it is not based upon movement over information to be displayed to which the modified cursor corresponds. Rather, the cursor image is always initially modified into the cat head merely based upon entry into the game window. Therefore, that game also does not meet limitation 72[e].

'449 Patent, Claim 1

> (a) **Preamble: A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:**

135. The same statements and reasoning that I have provided regarding the Fearless Fergie bauble regarding claim 72 apply equally to Dr. Houh's statements for the '449 Patent's claim 1 and the other Asserted Claims of the '449 Patent as well. Therefore, this preamble, is not met by Fearless Fergie game for the same reasons.

(b) **Limitation 1[a]: cursor image data corresponding to said specific image**

136. The same statements and reasoning that I have provided regarding the Adveractive games in this report regarding the lack of specific images in claim 72 apply equally to Dr. Houh's statements for this claim and the other Asserted Claims of the '449 Patent as well.

137. However, I add that this claim limitation is only met by cursor image data that creates the shape and appearance of the specific image of a modified cursor image. I do not dispute that the cat head images recited in ¶ 166 for the Fearless Fergie bauble are cursor images, but are not a specific image of a modified cursor image as required by the claim, as previously discussed in connection with claim 72.

(c) **Limitation 1[b]: cursor display code, said cursor display code operable to modify said cursor image, and**

138. I agree with the description in the "cursor change" column regarding the Fearless Fergie bauble in Dr. Houh's ¶ 170. However, these alleged modified cursors do not have the shape and appearance of the specific image required by the claim for the same reasons as previously described in connection with claim 72.

(d) **Limitation 1[c] a first server computer for transmitting specified content information to said remote user terminal, said specified content information including at least one cursor display instruction indicating a location of said cursor image data,**

139. The same statements and analysis I made for claim 72 regarding the lack of clear and convincing evidence regarding the Fearless Fergie game being anything other than a game a user can go onto a website to download, install and ultimately play or not play also apply here.

> (e) **Limitation 1[d] said cursor display instruction and said cursor display code operable to cause said user terminal to display a modified cursor image on said user's display in the shape and appearance of said specific image, wherein said specified content information is transmitted to said remote user terminal by said first server computer responsive to a request from said user terminal for said specified content information, and**

140. The same statements and analysis I made for claim 72 regarding the lack of clear and convincing evidence regarding the Fearless Fergie game being anything other than a game a user can go onto a website to download, install and ultimately play or not play also apply here.

> (f) **Limitation 1[e]: wherein said specified content information further comprises information to be displayed on said display of said user's terminal, said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and**

141. The same statements and analysis I made for claim 72 regarding the lack of clear and convincing evidence regarding specific image including content corresponding to at least a portion of said information to be displayed also apply here.

> (g) **Limitation 1[f]: wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor over a display of said at least a portion of said information to be displayed on said display of said user's terminal, and wherein said specific image relates to at least a portion of said information to be displayed on said display of said user's terminal.**

142. The same statements and analysis I made for claim 72's requirement for modifying the cursor image to the specific image in response to movement of the cursor over a display of the at least the portion of the information to be displayed on the display of the user's terminal, and to which the specific image corresponds, also apply here.

'449 Patent, Claim 27

(a) **Preamble: A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:**

143. This preamble is identical to the preamble of claim 1 of the '449 patent and is not disclosed by the Fearless Fergie game for the same reasons previously discussed above.

(b) **Limitation 27[a]: cursor image data corresponding to said specific image**

144. This limitation is identical to claim element 1[a] and is not disclosed by the Fearless Fergie game and baubles for the same reasons I have previously discussed above.

(c) **Limitation 27[b]: cursor display code, said cursor display code operable to modify said cursor image, and**

145. This limitation is identical to limitation 1[b] and is not disclosed by the Fearless Fergie game for the same reasons I have previously discussed above.

(d) **Limitation 27[c]: a first server computer for transmitting specified content information to said remote user terminal, said specified content information including at least one cursor display instruction indicating a location of said cursor image data,**

146. This limitation is identical to claim element 1[c] and is not disclosed by the by the Fearless Fergie game for the same reasons I have previously discussed above.

(e) **Limitation 27[d]: said cursor display instruction and said cursor display code operable to cause said user terminal to display a modified cursor image on said user's display in the shape and appearance of said specific image, wherein said specified con-tent**

information is transmitted to said remote user terminal by said first server computer responsive to a request from said user terminal for said specified content information, and

147. This claim element is identical to claim element 1[d] and is not disclosed by the Fearless Fergie game for the same reasons I have previously discussed.

(f) **Limitation 27[e]: wherein said specified content information further comprises information to be displayed on said display of said user's terminal, said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and**

148. This limitation is substantively identical to claim element 72[d] and is not met by the Fearless Fergie game for the reasons I have previously discussed in connection with that claim.

(g) **Limitation 27[f]: wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor image over a specified location on said user's terminal, and wherein said specific image relates to at least a portion of said information to be displayed on said display of said remote user's terminal.**

149. This limitation is not met by the Fearless Fergie game for the reasons I have previously discussed in connection with the previously addressed claims. The first part of this limitation ("wherein said cursor display code … on said user's terminal") is similar to the part of limitation 72[e] that begins with "a cursor display code operable" in that claim element, but differs in that it requires "movement of said cursor over a specified location on said user's terminal," whereas limitation 72[e] refers to "movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal." Therefore, this element does not require the information to be displayed that triggers

the modification to be the same as the content to which the specific image corresponds. My other opinions regarding by the Fearless Fergie game are the same and apply to this claim.

'449 Patent, Claim 53

(a) **Preamble: A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:**

150. This preamble is identical to the preamble of claim 72 and is not disclosed by the Fearless Fergie game because there is no cursor modification for the same reasons I have previously discussed.

(b) **Limitation 53[b]: providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least on indication of cursor image data corresponding to a specific image**

151. This claim element is identical to limitation 72[b] and is not disclosed by the Fearless Fergie game for the same reasons I have previously discussed.

(c) **Limitation 53[c]: transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction**

152. This limitation is identical to limitation 72[c] and is not disclosed by the Fearless Fergie game because there is either no cursor modification or there is a cursor modification but no specific image as required by the limitation for the same reasons I have previously discussed.

(d) **Limitation 53[d]: wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal, and**

153. This limitation is identical to limitation 72[d] and is not disclosed by Fearless Fergie game for the same reasons I have previously discussed.

(e) **Limitation 53[e]: wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal, and wherein said specific image has a shape and appearance relating to said information to be displayed.**

154. The first part of this limitation is substantially identical to the limitation 72[e] and is not disclosed by the Fearless Fergie game for the same reasons I have previously discussed.

'241 Patent, Claim 35

(a) **Preamble: A system for modifying a cursor image, comprising:**

155. The Fearless Fergie game is not the claimed system for modifying a cursor image for reasons previously discussed and as I will specifically address with regard to this claim. In particular, as previously discussed, I do not see clear and convincing evidence that any Adveractive game, including Fearless Fergie, was anything other than a game that a user could merely download from a website and activate whenever they wished to play. Also, as I will discuss further, the cat head does not track the movement of the cursor but rather tracks the presence or absence of Fearless Fergie and Fearless Fergie's position relative to the cursor. In other words, the cat head will change without any cursor movement at all.

(b) **Limitation 35[a]: at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image**

156. That Adveractive games are not online games with the recited architecture and do not include "client computers" as in accused instrumentalities. Rather the user goes to a specific webpage to first download and then activate the game to play it, without any further communication with a server. I also disagree with Dr. Houh's premise in ¶ 206 that the visual image is the cursor image ("…specify the appearance of a visual image, i.e., the cursor."). As I will discuss further in connection with limitations 35[b] and [c], a visual image that is a fixed part of the modified cursor image cannot "track" the modified cursor image simply because it moves with it. A POSITA would not understand the claim to cover a fixed part of the cursor image because such an image would have been met by the prior art Berstis reference, which the Examiner distinguished in amending the claim to add the "tracks a movement" limitation. As I will discuss further in connection with limitations 35[b] and [c], none of the Adveractive games or baubles have a visual image that meets the claim's requirements. Consequently, this limitation is not met by any of the Adveractive games or baubles.

157. Further, the claim requires a cursor display instruction to specify the appearance of a visual image. Because the Fearless Fergie game does not include a cursor display instruction that specifies the shape and appearance of a visual image meeting the claim requirements, this limitation is also not met for this additional reason.

158. Dr. Houh identifies in ¶ 206 "code [that] includes instructions that identify the cast members that are to be used for the cursor, and, therefore, specify the appearance of a visual image, i.e., the cursor" as meeting ostensibly this limitation. He also states this limitation is met by "specific image components of the [DCR] cast that were to be used as visual images for the cursor." Likewise, he purports to have found a cursor display instruction "that specifies an appearance of a visual image that will be used to modify the cursor image." He does not

however, identify in his report for any of these images any cursor display instructions that specify a visual image that is not a fixed part of the cursor image. Because no such cursor display instructions exist, this limitation is not met in the Fearless Fergie game.

(c) **Limitation 35[b]: following the receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image,**

159. Dr. Houh states in ¶ 207: "After the HTML and DCR files are received the user's web browser and Shockwave plug-in will render the HTML and DCR files. The client computer hosting the Shockwave plug-in will perform the functions necessary to implement the instructions encoded in the DCR file, including cursor display instructions invoked by the Lingo code encoded in the DCR file." But I do not see clear and convincing evidence of limitation because I do not see where the Fearless Fergie game is immediately implementable by the browser for cursor modification versus having to first initiate the game in order to play it.

(d) **Limitation 35[c]: wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image.**

160. Dr. Houh identifies no cursor display instructions that modify the cursor image to include a visual image that would meet the requirement of the claim. In every instance, Dr. Houh cites an image that is the modified cursor image itself and therefore cannot meet the "tracks a movement" requirement of limitation 35[c].

161. Each visual image identified by Dr. Houh is the cat head itself; he identifies no included visual image. Moreover, any changes that occur when the cat head is selected to be displayed take place whether the cat's head is being moved the user or not. See Houh Report at ¶¶ 124. Therefore, changes to the cat's head are based upon the position of the Fearless

Fergie image and not based upon the movement of the cat head. The only other example Dr. Houh cites is the initial change of the default cursor to the cat head when the cursor potion is detected close to the playing field. There is no cursor display instruction to modify the cursor to include a visual image that meets the requirements of the claim, including limitation 35[c].

162. I address separately Dr. Houh's ¶ 211. The claim requires that the visual image include promotional material. For the purposes of the claim, whether or not there is promotional material displayed elsewhere is irrelevant. Nor is it relevant that "the Adveractive games and baubles were designed to promote Adveractive's multimedia business" or that "transformation of a cursor into a cat head that appeared to track the movement of Fearless Fergie Mouse was part of Adveractive's strategy for marketing its web and game design capabilities and obtaining further commercial work," as Dr. Houh says. Wholly missing from Dr. Houh's analysis is any identification of a modified cursor image that includes a visual image that actually includes promotional material (which I understand to be used synonymously with advertising, as there is no distinction made between the two in either the file history or specification.) No such visual image exists.

163. Finally, I disagree with any interpretation that renders meaningless the limitation of the included visual image tracking the modified cursor image. Regarding his ¶ 214, I disagree that the "if the visual image is included in the cursor image…then the visual image necessarily tracks the cursor image" renders the limitation vacuously satisfied because that would render the claim language added by the Examiner meaningless in the face of prior art distinguished by the Examiner that might otherwise meet Dr. Houh's interpretation.

164. Dr. Houh's interpretation implies that something that is a fixed part of, or otherwise fixed relative to, the modified cursor image automatically tracks its movement. But that cannot

be what the Examiner meant by the added "tracks a movement" language. Rather, this claim covers the disclosed embodiments wherein there is either a component of the cursor image that is not fixed relative thereto, for example, the straw that keeps reorienting towards the Fizzy Cola bottle, as described, or a satellite image that appears as part of the cursor modification and moves relative to the cursor movement. See '102 Patent, 17:-15-31: "Alternatively, Fizzy Cola, on its own site, or homepage, might have a picture of a bottle of Fizzy in the middle of the page (in the display data). A dynamic cursor image could then be used to show a person holding a straw in such a way that the straw always points from the user toward the top of the Fizzy bottle, no matter where the cursor moves on the screen. The straw, in this case, might be 'attached' to the cursor image (part of the same image) or could be separate, 'satellite' image, a 'sprite,' whose movement on the screen (in this case) is related to the movement of the cursor. Sprites, which can appear and disappear as desired, can enhance the invention by enabling the use of graphical elements which are associated with the cursor, but which reside outside the limited cursor 'space' (which in some systems may be, at maximum, 32 by 32 pixels). For the purposes of the invention, however, there should be no limitation to the size of the cursor." This specification language is consistent with claim 1 of the '241 patent (which Dr. Houh discusses at his ¶ 214). Therefore, I find Dr. Houh has not supported by clear and convincing evidence that the claim limitation is met, particularly also given that the cat head can change without any cursor movement based upon position (*e.g.*, you can move the cursor back and forth outside of the game boundary without any change into the cat head, it is only when the cursor is positioned sufficiently near the game boundary that the initial change is made---likewise one can move the cursor back and forth when Fergie is in one of its holes and there will be no change of cat head image).

C. Adveractive's Brunswick's Cosmic Bowling Game does not Render Obvious any Asserted Claim.

165. As an initial matter, I do not agree that Dr. Houh establishes clearly and convincingly that the Brunswick Cosmic Bowling game is prior art. As I understand it, the documentary evidence establishes that Adveractive sent the game to Brunswick on March 31, 1997 but that there is no documentation to corroborate when Brunswick made the game available for the public to download from their webpage. As I understand the evidence, the earliest documented availability of the game was in 1998 per the Internet Archive. I do believe had it been made available earlier, the Internet Archive would have captured it earlier. Since the first documented instance of the existence of the www.brunswickbowling.com/html/game.html webpage upon which it being hosted is April, 24, 1998 (see https://web.archive.org/web/20240000000000*/www.brunswickbowling.com/html/ game.html). I believe that was the date of first public availability of the Cosmic Bowling game and therefore it is not prior art.

166. I note that the Brunswick Cosmic Bowling Game has no corresponding video. However, based upon the code, I do not generally disagree with the factual description of the game Dr. Houh presents in his report. To function, the game involved some conventional drag and drop operations, such as depressing and holding a mouse button to move the bowling ball and then releasing the mouse button to launch the bowling ball. Adveractive's witness Steve Bullock testified to the same in his deposition. *See e.g.*, Exhibit F, Deposition of Steve Bullock ("Bullock Depo."), 232:6-14; Exhibit D, the Terveen Rebuttal Report at ¶ 212; and Exhibit E the Goodin Rebuttal Report. The Cosmic Bowling game did not disclose each and every claim element of any Asserted Claim.

'102 Patent, Claim 72

(a) **Limitation 72[Preamble] A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:**

167. I do not agree that Cosmic Bowling game necessarily disclosed the claimed method and meets the preamble because I understand that the game is downloaded to a computer in full from a server and subsequently run on that computer when the user wants and without need for further connection to any server. In other words, while the claim encompasses serving webpages, which requires the user terminal to be connected to at least one server, the operation of the Cosmic Bowling game does not require such a connection or the claimed server-client communication. Therefore, I disagree that Dr. Houh shows clearly and convincingly this preamble is met in his description at Houh Rpt. ¶ 232.

(b) **Limitation 72[a]: receiving a request at said at least one server to provide specified content information to said user terminal**

(c) **Limitation 72[b]: providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image,**

168. I do not agree that Cosmic Bowling necessarily meets these limitations because I understand that the game is downloaded from a webpage to a computer in full from a server and then subsequently run on that computer when the user wants and without need for further connection to any server. In other words, while these claim elements encompass serving webpages through server connections, the Cosmic Bowling game does not include such service of a webpage. Rather, the user goes to a webpage and manually downloads the game. The user then activates the game to play it. Therefore, I disagree that Dr. Houh shows clearly and convincingly that these elements are met as his description only show the downloading of a

game that can then be played, or never played, at the user's option in contrast to the claimed method of these elements and the preamble.

169. I also do not agree that the Cosmic Bowling game includes the claimed cursor display instruction or specific image. The open hand cursors are not the claimed specific images, nor is the hand with the truncated fingers, because none of these are representative of the subject or topic on the screen over which the cursor must be moved in order to trigger the change to the specific image. Furthermore, the truncated finger hand modification is not a result of the claimed cursor display instructions.

(d) **Limitation 72[c]: transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction,**

170. I disagree that Dr. Houh provides clear and convincing evidence that the claim limitation is met because neither does Cosmic Bowling disclose the claimed specific image nor the claimed cursor display instruction, as explained further in addressing 72[d] and 72[e]. I agree with Dr. Terveen's opinion in his ¶ 280 of his report in the Amazon case (Exhibit G) that neither the open hand nor the truncated finger hand by themselves are representative of the topic being displayed on the screen and disagree with Dr. Houh that they are so representative.

(e) **Limitation 72[d]: wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal, and**

171. While I agree with Dr. Houh that "a person's hand can be used for activities other than bowling" (¶ 252) I do not believe that anyone looking at just the open hand images would think "bowling" particularly since the open hand images have been used to signify that a user

operation (such as a move operation) can take place at the location of the hand. Nor would a anyone looking at just the "pointing hand" or "holding hand" image immediately think "bowling" for the same reason, particularly since the images look similar to other pointing hand images that have been used to signify that a user operation can take place (such as clicking on a link). I also disagree with Dr. Houh's explanation (¶ 254) that changing the image to indicate the user's handedness or to affect ball travel or to indicate "where they should release the ball to achieve a good throw" shows clear and convincing evidence that meets this claim limitation because none of that explanation of the other reasons to use those images alters the fact that the image itself is not representative of the topic.

172. I also disagree that the modification to the "holding hand" image is the result of a cursor modification instruction because it rather is the result of a drag and drop operation and the user must continue to depress a mouse key in order continue that operation. Moreover, the fact that the user only sees the "holding hand" image as a result of drag and drop operation and must continue to depress

173. I disagree that Dr. Houh has presented any clear and convincing evidence that modifying to a hand image specifically indicative of bowling and the result of the claimed cursor display instruction is taught or suggested by Cosmic Bowling. Rather, I believe this opinion is supported only by impermissible hindsight reconstruction.

'449 Patent, Claim 1

(a) **Preamble: A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:**

174. The same statements and reasoning that I have provided regarding the Cosmic Bowling game regarding the preamble of claim 72 apply equally to Dr. Houh's statements for

the preamble for claim 1 and the other Asserted Claims of the '449 Patent as well. Therefore this preamble is also not met by the Cosmic Bowling game and for the same reasons.

(b) **Limitation 1[a]: cursor image data corresponding to said specific image**

175. The same statements and reasoning that I have provided regarding the Adveractive games in this report regarding the lack of specific images in claim 72 apply equally to Dr. Houh's statements for this claim and the other Asserted Claims of the '449 Patent as well. The various hand images are not specific images.

(c) **Limitation 1[b]: cursor display code, said cursor display code operable to modify said cursor image, and**

176. I agree with the description in the "modification in cursor image" column regarding the Cosmic Bowling game in Dr. Houh's ¶ 268 However, these alleged modified cursors do not have the shape and appearance of the specific image required by the claim for the same reasons as previously described in connection with claim 72, and the operations in row (v) is not the result of the claims cursor display instruction but a drag and drop operation wherein the modification only takes place for as long as the user continues to depress the mouse key or otherwise continue the drag and drop operation. See also Houh Report ¶ 313 ("If the cursor image is one of the hands with the truncated fingers that is used when the player has used a mouse button down press to select a ball for throwing down the lane, the cursor reverts when the player releases the mouse button, and the ball begins to travel independently down the lane.")

(d) **Limitation 1[c] a first server computer for transmitting specified content information to said remote user terminal, said specified content information including at least one cursor display instruction indicating a location of said cursor image data,**

177. The same statements and analysis I made for claim 72 regarding the lack of clear and convincing evidence regarding the Cosmic Bowling game being anything other than a game a user can go onto a website to download, install and ultimately play or not play also apply here.

> (e) **Limitation 1[d] said cursor display instruction and said cursor display code operable to cause said user terminal to display a modified cursor image on said user's display in the shape and appearance of said specific image, wherein said specified content information is transmitted to said remote user terminal by said first server computer responsive to a request from said user terminal for said specified content information, and**

178. The same statements and analysis I made for claim 72 regarding the lack of clear and convincing evidence regarding the Fearless Fergie game being anything other than a game a user can go onto a website to download, install and ultimately play or not play also apply here to the Cosmic Bowling game.

> (f) **Limitation 1[e]: wherein said specified content information further comprises information to be displayed on said display of said user's terminal, said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and**

179. The same statements and analysis I made for claim 72 regarding the lack of clear and convincing evidence regarding specific image including content corresponding to at least a portion of said information to be displayed also apply here.

> (g) **Limitation 1[f]: wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor over a display of said at least a portion of said information to be displayed on said display of said user's terminal, and wherein said specific image relates to at least a portion of said information to be displayed on said display of said user's terminal.**

180. The same statements and analysis I made for claim 72's requirement for modifying the cursor image to the specific image in response to movement of the cursor over a display of the at least the portion of the information to be displayed on the display of the user's terminal, and to which the specific image corresponds, also apply here.

'449 Patent, Claim 27

(a) **Preamble: A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:**

181. This preamble is identical to the preamble of claim 1 of the '449 patent and is not disclosed by the Cosmic Bowling game for the same reasons previously discussed above.

(b) **Limitation 27[a]: cursor image data corresponding to said specific image**

182. This limitation is identical to claim element 1[a] and is not disclosed by the Cosmic Bowling game and baubles for the same reasons I have previously discussed above.

183. This limitation is identical to limitation 1[b] and is not disclosed by the Cosmic Bowling game for the same reasons I have previously discussed above.

(c) **Limitation 27[c]: a first server computer for transmitting specified content information to said remote user terminal, said specified content information including at least one cursor display instruction indicating a location of said cursor image data,**

184. This limitation is identical to claim element 1[c] and is not disclosed by the Cosmic Bowling game for the same reasons I have previously discussed above.

(d) **Limitation 27[d]: said cursor display instruction and said cursor display code operable to cause said user terminal to display a modified cursor image on said user's display in the shape and appearance of said specific image, wherein said specified con-tent information is transmitted to said remote user terminal by said first server computer responsive to a request from said user terminal for said specified content**

information, and

185. This claim element is identical to claim element 1[d] and is not disclosed by the Cosmic Bowling game for the same reasons I have previously discussed.

(e) **Limitation 27[e]: wherein said specified content information further comprises information to be displayed on said display of said user's terminal, said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and**

186. This limitation is substantively identical to claim element 72[d] and is not met by the Cosmic Bowling game for the reasons I have previously discussed in connection with that claim.

(f) **Limitation 27[f]: wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor image over a specified location on said user's terminal, and wherein said specific image relates to at least a portion of said information to be displayed on said display of said remote user's terminal.**

187. This limitation is not met by the Cosmic Bowling game for the reasons I have previously discussed in connection with the previously addressed claims. The first part of this limitation ("wherein said cursor display code … on said user's terminal") is similar to the part of limitation 72[e] that begins with "a cursor display code operable" in that claim element, but differs in that it requires "movement of said cursor over a specified location on said user's terminal," whereas limitation 72[e] refers to "movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal." Therefore, this element does not require the information to be displayed that triggers the modification to be the same as the content to which the specific image corresponds. My opinions regarding by the Cosmic Bowling game are the same and apply to this claim.

’449 Patent, claim 53

(a) **Preamble: A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising**:

188. This preamble is identical to the preamble of claim 72 and is not disclosed by the Cosmic Bowling game because there is no cursor modification for the same reasons I have previously discussed.

(b) **Limitation 53[b]: providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image**

189. This claim element is identical to limitation 72[b] and is not disclosed by the Cosmic Bowling game for the same reasons I have previously discussed.

(c) **Limitation 53[c]: transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction**

190. This limitation is identical to limitation 72[c] and is not disclosed by the Cosmic Bowling game because there is either not the claimed cursor modification as a result of the claimed cursor display instructions and no specific image as required by the limitation for the same reasons I have previously discussed.

(d) **Limitation 53[d]: wherein said specified content information includes information that is to be displayed on said display of said user’s terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user’s terminal, and**

191. This limitation is identical to limitation 72[d] and is not disclosed by Cosmic Bowling game for the same reasons I have previously discussed.

(e) **Limitation 53[e]: wherein said cursor display instruction indicates a cursor display code operable to**

process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal, and wherein said specific image has a shape and appearance relating to said information to be displayed.

192. The first part of this limitation is substantially identical to the limitation 72[e] and is not disclosed by the Cosmic Bowling game for the same reasons I have previously discussed.

'241 Patent, Claim 35

(a) **Preamble: A system for modifying a cursor image, comprising:**

193. The Cosmic Bowling game is not the claimed system for modifying a cursor image for reasons previously discussed and as I will specifically address with regard to this claim. In particular, as previously discussed, I do not see clear and convincing evidence that any Adveractive game, including Cosmic Bowling, was anything other than a game that a user could merely download from a website and activate whenever they wished to play. Also, as I will discuss further Dr. Houh shows no included visual image that tracks the movement of the modified cursor rather than consists of a fixed part of the modified cursor itself.

(b) **Limitation 35[a]: at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image**

194. That Adveractive games are not online games having the claimed architecture and do not include "client computers" because no server is required to play the game. Rather the user visits a specific webpage to first download and then activate the game to play it. I also disagree with Dr. Houh's premise in ¶ 206 that the visual image is the cursor image ("…specify the appearance of a visual image, i.e., the cursor."). As I will discuss further in connection with

limitations 35[b] and [c], a visual image that is a fixed part of the modified cursor image cannot "track" the modified cursor image simply because it moves with it. A POSITA would not understand the claim to cover a fixed part of the cursor image because such an image would have been met by the prior art Berstis reference, which the Examiner distinguished in amending the claim to add the "tracks a movement" limitation. As I will discuss further in connection with limitations 35[b] and [c], none of the Adveractive games or baubles have a visual image that meets the claims requirements. Consequently, this limitation is not met by any of the Adveractive games or baubles.

195. Further, the claim requires a cursor display instruction to specify the appearance of a visual image. Because the Cosmic Bowling game does not include a cursor display instruction that specifies the shape and appearance of a visual image meeting the claim requirements, this limitation is not met.

196. Dr. Houh identifies in ¶ 206 "code [that] includes instructions that identify the cast members that are to be used for the cursor, and, therefore, specify the appearance of a visual image, i.e., the cursor" as ostensibly meeting this limitation. He also states that this limitation is met by "specific image components of the [DCR] cast that were to be used as visual images for the cursor." Likewise, he purports to identify a cursor display instruction "that specifies an appearance of a visual image that will be used to modify the cursor image." He does not however, identify in his report for any of these images any cursor display instructions that specify a visual image that is not a fixed part of the cursor image itself. Because no such cursor display instructions exist, this limitation is not met in the Cosmic Bowling game.

(c) **Limitation 35[b]: following the receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image,**

197. Houh states in ¶ 207: "After the HTML and DCR files are received the user's web browser and Shockwave plug-in will render the HTML and DCR files. The client computer hosting the Shockwave plug-in will perform the functions necessary to implement the instructions encoded in the DCR file, including cursor display instructions invoked by the Lingo code encoded in the DCR file." But I do not see clear and convincing evidence of the presence of this limitation because I do not see where the Cosmic Bowling game is immediately implementable by the browser for cursor modification versus having to first open the game in order to play it and therefore is different than the claimed system.

(d) **Limitation 35[c]: wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image.**

198. Dr. Houh identifies no cursor display instructions that modify the cursor image to include a visual image that would meet the requirement of the claim. In every instance, Dr. Houh cites an image that is a fixed part of the modified cursor image itself and therefore cannot meet the "tracks a movement" requirement of limitation 35[c]. Each visual image identified by Dr. Houh is the cursor image itself. There is no cursor display instruction to modify the cursor to include a visual image that meets the requirements of the claim.

199. I address separately Dr. Houh's ¶ 311. The claim requires that the visual image include promotional material. For the purposes of the claim, whether or not there is promotional material displayed elsewhere is irrelevant. Nor is it relevant that "Cosmic Bowling was explicitly designed to promote Brunswick Bowling's products, which are identified by name and depicted at the top of the game" or that "[w]hen a user moves the cursor over these bowling balls, a text description of the virtues of these bowling balls appears in a box at the lower right-hand corner of the screen. Wholly missing from Dr. Houh's analysis is any identification of a modified cursor image that includes a visual image that tracks the movement

of the modified cursor image and actually includes promotional material (which I understand to be used synonymously with advertising as there is no distinction made between the two in either the file history or specification). No such visual image exists.

200. Finally, I disagree with any interpretation that renders the limitation of the included visual image tracking the modified cursor image meaningless. Regarding his ¶ 214, I disagree that the claim element "if the visual image is included in the cursor image…then the visual image necessarily tracks the cursor image" because that would render the claim language added by the Examiner meaningless in the face of prior art distinguished by the Examiner that might otherwise meet Dr. Houh's interpretation.

201. Dr. Houh's interpretation implies that something that is a fixed part of, or otherwise fixed relative to, the modified cursor image tracks its movement. But that cannot be what the Examiner meant by the added "tracks a movement" language. Rather, this claim covers the disclosed embodiments wherein there is either a component of the cursor image that is not fixed relative thereto, for example, the straw that keeps reorienting towards the Fizzy Cola bottle, as described, or a satellite image that appears as part of the cursor modification and moves relative to the cursor movement. See '102 Patent, 17:-15-31: "Alternatively, Fizzy Cola, on its own site, or homepage, might have a picture of a bottle of Fizzy in the middle of the page (in the display data). A dynamic cursor image could then be used to show a person holding a straw in such a way that the straw always points from the user toward the top of the Fizzy bottle, no matter where the cursor moves on the screen. The straw, in this case, might be 'attached' to the cursor image (part of the same image) or could be separate, 'satellite' image, a 'sprite,' whose movement on the screen (in this case) is related to the movement of the cursor. Sprites, which can appear and disappear as desired, can enhance the invention by enabling the

use of graphical elements which are associated with the cursor, but which reside outside the limited cursor 'space' (which in some systems may be, at maximum, 32 by 32 pixels). For the purposes of the invention, however, there should be no limitation to the size of the cursor." This specification language is consistent with unasserted claim 1 of the '241 patent (which Dr. Houh discusses at his ¶ 214). Therefore, I find Dr. Houh has not supported by clear and convincing evidence that the claim limitation is met, particularly also given that the there is no evidence of any included visual images that track the movement of the modified cursor image. All of Dr. Houh's examples are either a fixed part of the cursor image or are the object of a drag and drop operation.

D. Malamud Does Not Render Any Asserted Claim Obvious

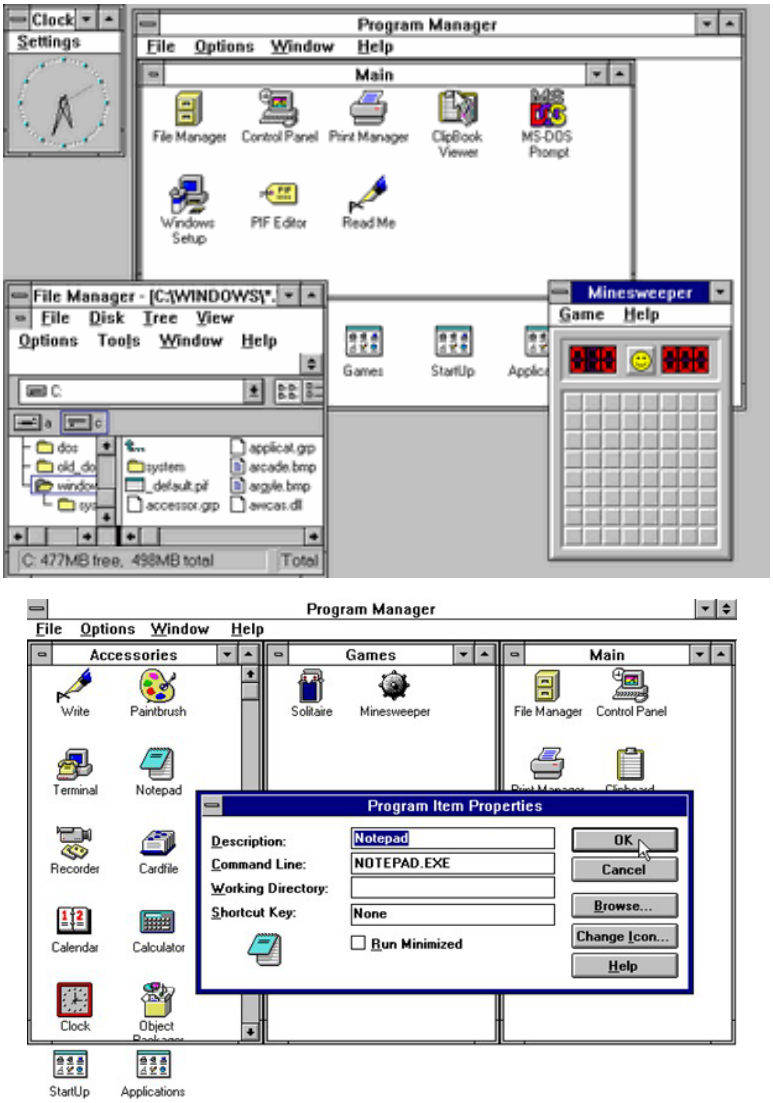
202. I disagree with Dr. Houh's conclusions in Section VII of his report regarding obviousness over Malamud, for at least the reasons set forth below.

203. At the outset, Malamud has been evaluated by the Patent Trial and Appeal Board ("PTAB") previously in an inter partes review, and the PTAB found that Asserted Claim 72 of the '102 Patent, and Asserted Claims 1, 38, and 53 of the '449 Patent were not obvious in view of Malamud, even in combination with Anthias, another reference. In particular, the PTAB did not find any evidence that Malamud transmitted the objects over which cursor could later be moved and modified. See e.g., IPR2018-01749, Paper 21 ("Final Written Decision"), pp. 23-26. It follows that if the references claims were not obvious over Malamud + Anthias, they would not be invalid over Malamud alone. Malamud teaches a Microsoft Windows application that works with the Windows 3.1 operating system. Windows 3.1 provided a then-familiar form of user interface having a "desktop" on which icons representing "named entities" can be displayed:

https://upload.wikimedia.org/wikipedia/en/7/73/Windows_3.11_workspace.png

204. As shown in the above screen shot, some of the named entities are "file manager," "control panel," "print manager," etc. As shown in the screenshot below, the operating system allowed the user to assign an icon to a named entity by selecting the "Change Icon" button.

http://toastytech.com/guis/win31.html



205. As Malamud explains, the application is to be used with a specialized operating system, such as "an embellished version of the Microsoft WINDOWS, version 3.1, operating system that supports the use of information cursors." Malamud at 4:35-38. This embellished operating system displays various types of information cursors such as the name cursor 26 of

FIGS. 2a, 2b, 2c, the preview cursor 34 of FIG. 3, or and the combined name and preview cursor 38 of FIG. 4, or a property cursor 40 of FIG. 5. These supported information cursor types each contain a pointing portion 28 and a second portion which is a box containing information about a named entity such as its name in box 30, an image in preview box 36 or text in a property box 42.

206. While Malamud does not explicitly describe that the embellished operating system is the source of the cursor display code that creates these boxes, a POSITA would understand "supports the use of information cursors" to mean that this code is provided in the embellished operating system, particularly in light of fact that Malamud nowhere else describes the source of the cursor display code for such boxes, and nowhere states the Malamud application to be the source of any such cursor display code. Rather, as Malamud describes: "Information cursors are made available by an operating system to applications that are run on the operating system." Malamud at 3:6-9.

207. This understanding is further reinforced by Malamud's description that the messages from the application to the operating system are contain only the type of information cursor to be displayed, whether its boxes should always be displayed or only displayed when the cursor is positioned over the associated named entity, and the content to be displayed in the box(es) of the selected information cursor type:

> FIG. 7 is a flowchart showing in more detail the steps that must be performed in order to realize step 56 of FIG. 6. After the window procedure has determined what is at the specified cursor position, the procedure passes a message to the operating system 22 (FIG. 1) that tells the operating system what type of cursor to display and sets forth the contents and type of information to be displayed in the cursor (step 58 in FIG. 7). Suppose that the application program desires to display a name cursor 26 (FIG. 2a). A message requesting that a name cursor be displayed is passed to the operating system 22

> along with a text string for the name to be displayed in the name box 30. However, if the cursor to be displayed is a preview cursor 34 (FIG. 3), a message specifying that a preview cursor is required is sent. The message includes a pointer to a bitmap of graphical information that the operating System 22 should use in the preview portion 36. Still further, a property cursor 46 may be requested in the message. The message, in Such a case, includes a text string for the text of property information to be displayed in the property box 42.

Malamud at 4:45-65.

208. Malamud does not explicitly describe how this information is input into the Malamud application for it to pass to the operating system, but a POSITA would understand that the information regarding the type of cursor to display and box content must be specified by a user in some manner, most likely through a direct user input to the Malamud application to allow the user to determine what type of entity to display and what content to display for the named entities on their computer system. A POSITA would not, however, understand that the Malamud application comes pre-loaded with the information cursor content, because it could not know what files are on the user's computer prior to installation. This understanding is reinforced by Malamud's description of an exemplary named entity: a text file for a book about

chess represented by a book icon 32 in which a preview cursor shows a graphic involving chess pieces. *See* Malamud, FIG.4 and 3:35-38 and 3:59-4:3.

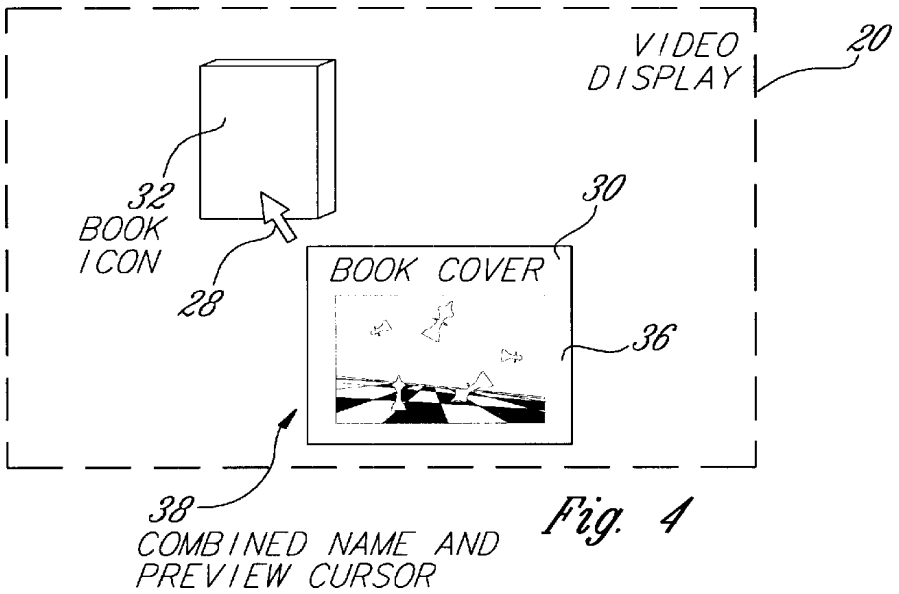


Fig. 4

209. A POSITA would understand from this description that the Malamud application does not come pre-shipped with knowledge that the computer it will be installed upon has stored on it a chess book but rather that the content of the information to be displayed is entered into the application by a user after its installation.

210. Nowhere does Malamud describe that the application sends the icon to the operating system. Rather, Malamud reinforces what a POSITA would understand, that the icon for the named entity is provided not by Malamud's application but from the operating system itself, which allows a user to specify icons for a given named entity.

211. Rather, Malamud describes a Windows application that works with an operating system, such as Windows 3.1, that has been "enhanced" to support the use of information cursors. A user installs and configures Malamud's application to, at a minimum, add the content to be displayed in the box(es) of an information cursor (i.e., specific image) and to specify which information cursor type is to be displayed when a cursor is positioned over the

Windows icon for a given named object/entity (cursor display instructions). There is no disclosure in Malamud of also transmitting the icon (or any other corresponding content to be displayed) from the application, much less from a server, as required by all Asserted Claims.

212. In his ¶ 321, Dr. Houh cites to three portions of Malamud for the proposition that "[t]he application generates book icons like those in Malamud's Figures 2, 3 and 4 as well as the additional explanatory text and images contained in the information cursors illustrated in those figures. But none of those passages (or any other specification in Malamud) stands for that proposition. First, there is not even any disclosure of the icon being transmitted in Malamud (as opposed, for example, to it being supplied by the operating system). Second, there is no disclosure in Malamud that the system comes pre-installed with the explanatory text or images. Therefore, there is no basis for Dr. Houh's conclusion that "information used by a data processing system like that described in Malamud could be supplied from a network server in response to queries from a computer like Malamud's." Indeed, Malamud was a tool to take advantage of information cursors provided by Windows 3.1. None of Dr. Houh's speculation regarding Malamud in his ¶¶ 321, 322 is supported by its disclosure or fueled by anything other than an attempt at hindsight reconstruction of the disclosed and claimed systems and methods of the Asserted Claims and I therefore disagree with his conclusions regarding the obviousness of the modifications he proposes.

213. Not only does Malamud not disclose that the application it describes comes pre-configured with any named entities or obtain them from a database. Nor would it make sense for Malamud to do so because, like the book on chess of Malamud's example, named entities are Windows icons for files that a user has created or saved on their computer. There is no disclosure in Malamud of the application coming preinstalled with files, using a client-server

architecture or providing information in response to queries. Nor is there any disclosure about providing information regarding files located elsewhere. To the contrary, the only files disclosed in Malamud are those stored on the Windows 3.1 computer that has the embellished operation system.

'102 Patent, Claim 72

(a) **Limitation 72[a]: receiving a request at said at least one server to provide specified content information to said user terminal;**

214. Dr. Houh does not contend that Malamud teaches this limitation, and instead contends that it would be obvious that "the data needed for Malamud's applications could be obtained from a remote server" and that Malamud could therefore be "requesting from the server whatever data it needed to draw graphical depictions for objects, for example Malamud's book icons, and any additional object data contained in information cursors." Houh Report ¶ 325. I disagree with this notion because the motivation is supplied by hindsight, as there is nothing to suggest that Malamud was providing information cursors for anything other than local files on computers running Windows 3.1.

215. As an initial matter, Malamud describes a Windows application that works with an operating system, such as Windows 3.1, that has been "enhanced" to support the use of information cursors. A user installs and configures Malamud's application to, at a minimum, add the content to be displayed in the box(es) of an information cursor (i.e., a specific image) and to specify which information cursor type is to be displayed when a cursor is positioned over the Windows icon for a given named object/entity (cursor display instructions). There is no disclosure in Malamud of also transmitting the related content to be displayed from a server in response to a request, as required by claim 72. Dr. Houh does not suggest otherwise.

216. Furthermore, Malamud makes it clear that "[i]nformation cursors are made available by an operating system to applications that are run on the operating system." Malamud at 3:6-8. Malamud further describes the invocation of information cursors by sending a message to the operation system telling it what cursor needs to be displayed. Malamud at 5:14-65. The icons in Malamud are provided by an "embellished" operating system. There is no disclosure that they are provided by Malamud's application.

(b) **Limitation 72[b]: providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image, and**

217. I also disagree that Dr. Houh's explanation of how Malamud renders this element obvious provides clear and convincing evidence that it does. Dr. Houh tries to support his explanation using HTTP GET requests for web page data. But unlike the Common Specification of the Asserted Patents, Malamud has nothing to do with browsers, web pages or GET requests for rendering the webpages. Malamud is a Windows application that runs on a computer using a special form of Windows that supports information cursors. There is no statement much less evidence by Dr. Houh that browsers or HTML protocol supported the display of information cursors or did so in 1997. Moreover, there would be no motivation for a POSITA to modify Malamud from a Windows application to an on-line application that provides the user annotated content within the cursor boxes because then the user of the user terminal would have to provide the proposed on-line version of Malamud access to the files on its computers in order for it to operate.

(c) **Limitation 72[d]: wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least**

a portion of said information that is to be displayed on said display of said user's terminal,

218. Here again, Dr. Houh concedes that Malamud does not disclose this claim element but relies on the same argument that it would be obvious to modify Malamud to operate in a client-server system and request icons plus the text or image information from a server. Again, such a conclusion is not supported by clear and convincing evidence and the same flaws in such an argument continue to apply. Also, there would be no request for the Windows icons since those icons would already exist at the user terminal. Therefore, there is no motivation to modify Malamud to provide such icons, which is the only asserted information to be displayed that would meet the element 72[e] requirement "to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal." Moreover, there would be no motivation for a POSITA to modify Malamud from a Windows application to an on-line application that provides the user annotated content within the cursor boxes because then the user of the user terminal would have to provide the on-line version of Malamud access to the files on its computers in order for it to operate. The icons disclosed in Malamud are Windows 3.1 icons to open files stored on a computer. Dr. Houh's misapprehension of the actual teachings of Malamud contaminates his speculation about the operation of a hypothetical on-line version, in which now Dr. Houh must even modify the function of the icon as well as the location of the files.

219. For the same reasons, Malamud does not render obvious Claims 1, 27 and 53 of the '449 Patent because these claims involve substantially the same requirements as Claim 72 of the '102 Patent and the same reasoning I have already discussed applies to these claims as well.

220. Claim 35 of the ’241 Patent is also not rendered obvious by Malamud, but different reasoning applies because this claim involves very different substantive requirements, including a dynamic requirement not present in any of the Asserted Claims of the ’102 and ’449 Patents via the “tracks a movement” requirement, as I will further discuss.

(d) **Limitation 35[a]: at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image**

221. The same reasoning I have previously discussed for the other Asserted Claims also applies here as to why Malamud does not teach or suggest to a POSITA a modification to a system in which icons, information cursors and the text or images to be presented within them are received from a server. Nor do I agree that a POSITA would be motivated to make an on-line version that could send such information because it would require access to file directories and icon information at the client computer that a user would not necessarily want to provide. Also, Malamud does not disclose modifying a cursor to include the claimed visual image. In each example Dr. Houh provides, the visual image is a fixed part of the modified cursor itself, as I will further discuss. Therefore, I disagree that any clear and convincing information shows Malamud renders element 35[a] obvious.

(e) **Limitation 35[b]: following the receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image**

222. I will further discuss element 35[b] in connection with element 35[c]. But since there is no obvious modification for the receipt of the content information, this limitation is not taught or suggested by Malamud.

(f) **Limitation 35[c]: wherein the visual image includes promotional material, and the visual image**

tracks a movement of the modified cursor image

223. Here I disagree with the inherency argument Dr. Houh makes in ¶ 395 of his report that "[t]he visual images created by the modified information cursors move with the cursor and, therefore, they track the movement of the modified cursor image." Implicit in this argument is the proposition that, because the visual image appears as a fixed part of the cursor, it necessarily tracks the movement of the modified cursor image. For one thing, Dr. Houh's interpretation would render the words "tracks a movement of the modified cursor image" mere surplusage, effectively reading them out of the claim entirely.

224. During the prosecution of the application leading to the '241 Patent, on February 8, 2011, by Examiner's Amendment attached to the Notice of Allowability, the Examiner added the "tracks a movement" limitation in allowing the claim to issue over prior art. *See* Exhibit H. U.S. Patent Nos. 6,018,345 ("Berstis") and 5,956,484 ("Rosenberg") were specifically cited and distinguished by the Examiner as not meeting the "tracks a movement" limitation. Yet in Berstis, there was a cursor image modification when the user scrolled over a link. Therefore, any image that was part of the modified cursor image would inherently move along with it. This is why an image that is simply part of the modified cursor image cannot be considered to "track" it as Dr. Houh posits.

225. Said another way, an image that is moves as a fixed part of the cursor does not "track" itself. In order to "track" the movement of the "modified cursor image" as required by this claim element, the visual image cannot be a part the modified cursor image--unless that visual image dynamically changes in accordance with the movement of the modified cursor. As previously discussed, this is shown, for example, in the embodiment disclosed in the '102 specification, in which a straw that is integrated with the modified cursor actually rotates in accordance with the modified cursor's movement. An image that is not part of the modified

cursor can also track its movement by changing or moving in accordance with the movement of the modified cursor image, such as by being programmatically tied to movement of the modified cursor image. For example, the Common Specification describes satellite images that are not a part of the modified cursor at all but are programmatically tied with the modified cursor image because they move or change in accordance with modified cursor image, such as the animated birds embodiment. These embodiments are consistent with unasserted claim 1 of the '241 patent. A POSITA would therefore clearly understand that an image that moves as a fixed part of the modified cursor image does not meet this limitation.

226. Dr. Houh asserts that this claim is met because, when an information cursor has been programmed in Malamud to display certain text or graphical content within its boundary in connection with hovering over a particular (Windows 3.1) icon, such a display meets this limitation. This is incorrect. First, there is no change to the content displayed within the information cursor box based upon cursor movement. That change is based simply based upon position anywhere over the icon. Moving the cursor position around all day over the icon does not change its content. A cursor image to include a visual image that tracks its movement, I will reserve my right to express such an opinion if any such opinion is presented. Second, that content becomes a "fixed" part of the modified cursor image. But, as previously discussed, the prosecution history does not allow for such an interpretation because any fixed part of the modified cursor would inherently track its movement and would render the language added by the examiner superfluous. Therefore, I disagree Dr. Houh's explanation provides clear and convincing evidence that this element is met. And Dr. Houh expresses no opinion regarding obviousness.

E. The Combination of Nielsen and Malamud Does Not Render Obvious any Asserted Claims

227. Nielsen is directed to a specific extension of the HTML standard that added a feature called "tooltips." A webpage developer could place into an HTML file, adjacent to any webpage content they wished to display, a tooltip tag and enter content they wish to be displayed in a tooltip box when a cursor is positioned over particular webpage content for a specified period of time. As Nielsen explains:



Fig. 2(a)



Fig. 2(b)



Fig. 2(c)

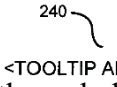


Fig. 2(d)

228. Thus, the web developer is able to insert tooltip tags into the webpage's HTML file next to various pieces of webpage text for which they wish a tooltip to be displayed. Because Nielsen's specification is directed to explaining this new feature of HTML, and its use requires proper use of HTML language, a great deal of Nielsen's specification is directed to the various valid HTML formats for tooltip tags, as show in FIGS. 2(a)-2(d):

229. As shown, the webpage developer can insert into the webpage's HTML file a pair of tooltip tags around the portion of webpage text for which a tooltip is desired to be displayed,

specify the tooltip text, and specify whether this tooltip text should be displayed over every instance of the webpage text.

230. In a primary example given, shown in FIG. 4, the tooltip text "London Heathrow" will appear over the webpage text "LHR" when a cursor has been positioned somewhere over "LHR" for a sufficient length of time. Likewise, the tooltip text "Universal Airlines" will appear above the webpage text "UA" and the tooltip text "San Francisco" will appear over the webpage text "SFO."

231. As Nielsen describes, all the webpage developer has to do is enter the following metadata into the HTML file for this to occur:

<TOOLTIP
TXT-
"Universal
Airlines'
EVERYW
HERE >
UA&/TOO
LTIP> Feb.
15, 1996
0931
<TOOLTIP
TXT-"London
Heathrow
EVERYWHER
E>LHR
</TOOLTIP>
<TOOLTIP
TXT-"San
Francisco'
EVERYWHER
E>SFO
&/TOOLTIP>
5368 6710
12078

Nielsen at 4:58-67.

232. Because browsers that support HMTL include code to execute these HTML instructions, the webpage developer does not have to provide code to the browser to make a tooltip appear on the user's display, but only supplies data surrounded by tags.

233. Nielsen is not directed to modifying cursor images. Figures 6a, 6b, and 7 provide flowcharts that do not describe methods for modifying a cursor using a conventional client-server architecture. There is no description of any cursor modification. And a tooltip is not a cursor nor is it a cursor image. It is simply a block of text that is displayed next to an associated webpage object. The tooltip does not move, nor would it make any sense in Nielsen for it to move because the point of Nielsen is to show the tooltip near the associated webpage text.

234. Rather, Nielsen is directed to the use of a special HTML extension added to the HTML standard to displays "tooltips." Similar to Malamud's application taking advantage of an embellished operating system that supports information cursors, Nielsen discloses the use of this special extension built into HTML to display the "tooltip." Specifically, Nielsen discloses that a web designer can add a "Tooltip" tag into a webpage's HTML that invokes the tooltip functionality of HTML and "specify the tooltip text that will be displayed when the cursor reaches the specified text." The tooltip does not modify or transform a cursor image. Rather, a tooltip text "preferably will be displayed in proximity to" some associated text field when the cursor is moved over that text field. This is shown and described in Nielsen's Fig. 8 and at 6:21-32.

235. Nielsen is narrowly directed to a specific HTML extension in which the tooltip is automatically generated by the HTML; all the programmer has to do within the webpage's HTML file is to enter, next to the webpage text for which a tooltip is directed, two tooltip tags and the desired tooltip text between the two tags. The tooltip tags have nothing to do with modifying a cursor image and Nielsen's tooltips are very different in purpose to the cursor image because the tooltip is only relevant when in proximity to a given relevant word.

Therefore, you would not want the tooltip to be displayed when the cursor image is located in a position that is not proximate to the word.

236. Malamud is likewise narrowly directed to an embellished operating system (e.g., some modified version of Windows 3.1) that is specifically built to support the information cursor types used by the Malamud application. In other words, the operating system already has been specifically coded with instructions to display the user designated type of information cursor and the information input by the user to display within the information cursor.

237. Furthermore, the tooltip taught by Nielsen does not appear in response to movement of a cursor over a display of information. Rather it is the absence of movement when the cursor is positioned over relevant text that makes a tooltip appear because Nielsen teaches that a cursor must be positioned over the associated webpage content for a specified period of time before the appearance of a tooltip is triggered. Nielsen at 3:34-45.

238. In contrast, the Common Specification provides extensive teachings on how to implement a cursor image modification. For example, the description spanning from 8:39-11:60 (and associated figures) specifies the required structure of an HTML file that implements the cursor image modification.

239. The disparate and limited respective environments of Nielsen and Malamud reinforce that a POSITA would not have been motivated to combine them to arrive at the Asserted Claims.

240. Therefore in my opinion there is not only no support for the suggested combination but there is no reasonable expectation that a tooltip could even successfully fulfill its intended function if displayed in a modified cursor.

241. While I agree that Nielsen does disclose sending specific webpage text for display, and tooltip tag pairs with tooltip text between them that instructs the browser to display the tooltip text when the cursor is positioned over that specific webpage (see 1:18-26, 1:51-57, 3:36-41, 3:46-4:7), for at least the reasons given above, the only motivation or expectation of success I see in the record comes from the Common Specification itself. A POSITA would not have been motivated to modify Nielsen's tooltip into a cursor modification nor would a POSITA have had any reasonable expectation that the tooltips would function as intended if displayed over unrelated text. Indeed, given the nature of a tooltip being relevant only to a specific piece of text such a modification would be unworkable because a tooltip would be displayed when the cursor was positioned over unrelated text.

242. I am advised that both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's own disclosure.

243. But even had there been any motivation to combine Nielsen and Malamud, I do not agree that a POSITA would modify an HTML extension to perform a cursor image modification as taught by the Common Specification or modify an equally narrowly tailored Windows application designed to work in conjunction with a specifically embellished operating system to implement a cursor display instruction and cursor display code in an HTML setting with a reasonable expectation of success to arrive at any of the Asserted Claims.

244. Regarding my disagreement with Dr. Houh's opinions that claim 72 is rendered obvious by a combination of Nielsen and Malamud, I offer the following additional reasons why it is not.

245. An online version of Malamud is not obvious because it would require access to a client's files structure names and icons to operate in the manner suggested by Dr. Houh (and

without the teachings of the common specification of the Asserted Patents) because it would require a browser supporting Malamud's functionality meaning that the browser would have to be embellished in the same way as the specialized operating system of Malamud that supports information cursors so that Malamud's application can interact with it. That is, the server purportedly providing the cursor modifications would have no way of knowing the particular file names contained in any directory on the client.

246. The TOOLTIP tag in the HTML do not constitute cursor display instructions and there would be no motivation to modify them to be cursor display instructions for the reasons I previously stated because they already by design only appear when a cursor is hovering over the associated object for which there is a TOOLTIP. Also, the fact that the TOOLTIP is not displayed when the cursor has moved over the object but rather only when it has been positioned over an object is by design because it is not desirable for a TOOLTIP to be instantly displayed when the cursor has been moved over the object. Rather, the user must indicate a desire to see the tooltip by having hovered over the object over a specific period of time. This is contrary to the requirement of claim 72 that the cursor modification be responsive to movement of the initial cursor image over the object, i.e., there is no pause.

247. It is for the same reason also contrary to the teaching of Nielsen to always show a TOOLTIP box with some content unrelated to the object that the cursor has been moved over or to even to keep having TOOLTIP instantly appear as you move a cursor around the screen. It would be annoying and create confusion, particularly if the TOOLTIP contained a graphic or was large or in a densely populated screen. Such a modification would simply be unworkable. Eliminating the pause before the TOOLTIP is displayed would be unworkable for the same reasons.

248. Consequently, I disagree fundamentally with Dr. Houh's analysis that this combination renders claim 72 obvious.

'102 Patent, Claim 72

(a) **Limitation 72[Preamble] A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:**

249. Nielsen does not teach a modified cursor, but rather teaches a tooltip in which text and/or a graphic relating to the object to which the cursor is pointing is displayed in proximity to the displayed object to which the cursor is pointing, instead of being displayed in association with the cursor.

250. Nielsen is not directed to modifying cursor images. Rather, Nielsen is directed to the use of a special HTML extension added to the HTML standard to displays "tooltips." Similar to Malamud's application taking advantage of an embellished operating system that supports information cursors, Nielsen discloses the use of this special extension built into HTML to display the "tooltip." Specifically, Nielsen discloses that a web designer can add a "Tooltip" tag into a webpage's HTML that invokes the tooltip functionality of HTML and "specify the tooltip text that will be displayed when the cursor reaches the specified text." The tooltip does not modify or transform a cursor image. Rather, a tooltip text "preferably will be displayed in proximity to" some associated text field when the cursor is moved over that text field. This is shown and described in Nielsen's Fig. 8 and at 6:21-32.

251. A tooltip is not a cursor, nor is it a cursor image. It is simply a block of text that is displayed next to an associated webpage object.

252. There would be no motivation to combine Nielsen and Malamud. The tooltip does not move, nor would it make any sense in Nielsen for it to move because the point of Nielsen is to only show the tooltip when the cursor is near the associated text.

253. The disparate and limited respective environments of Nielsen and Malamud reinforce that a POSITA would not have been motivated to combine them to arrive at claim 72. The HTML "tooltip" extension is specifically designed to only display the tooltip when the cursor is over the associated webpage text, so the user's attention is already focused on the relevant webpage text for which it is desirable to show a tooltip. It would be contrary to the teachings of Nielsen to show the tooltip any other time because the cursor may be far away from the relevant text. Imagine, for example, the tooltip displaying "London Heathrow" when the cursor is not positioned over the "LHR" text but rather positioned over some other webpage text representing another airport or some other unrelated text. Now instead of a relevant tooltip, there would only be user confusion. Thus, there is no support for the suggested combination and there is no reasonable expectation that a tooltip could even successfully fulfill its intended function if displayed in a modified cursor according to Malamud.

254. The suggestion to combine references and the reasonable expectation of success of the combination must be founded in the prior art, not in the applicant's disclosure. A POSITA would not have been motivated to transform Nielsen's tooltip into a cursor modification, nor would a POSITA have had any reasonable expectation that the tooltips would function as intended if displayed over unrelated text. First, Nielsen only instructs a POSITA that there has been an addition to the HTML standard that can be used by a webpage developer so that metadata (i.e., a pair of tooltip tags bracketing tooltip content to be displayed) can be inserted in an HTML file next to webpage content and instruct the browser to display a tooltip content next to that webpage content, and only when the cursor is stopped for a minimum period of time over that webpage content. It does not suggest modifying the cursor or instruct how to do so.

255. Second, given the nature of a tooltip, the tooltip is relevant only to specific webpage content and therefore only displayed next to that specific content and only when the user's attention is already focused on that webpage content because the cursor is hovering over that webpage content. For example, a tooltip for "London Heathrow" is only relevant to the abbreviation "LHR" and therefore "London Heathrow" is only displayed when the cursor hovers over the text "LHR" for a sufficient period of time to indicate that the user's attention is focused on that specific text. It would not be obvious to replace the tooltip with a modified cursor and the POSITA would be not motivated to do so because nobody would want the tooltip "London Heathrow" to be displayed as a modified cursor image when the cursor was moved over the letters "SFO" or any other text than "LHR" (or anywhere else on the webpage page far from the letters "LHR.") Nor would a POSITA be motivated to display tooltips in response to the movement of the cursor over some triggering webpage content, but rather the exact opposite -- the cessation of cursor movement for a specified minimum period of time. Given the disparate reasons for display and tooltip and a modified cursor image, trying to substitute a cursor modification for the display of a tooltip would be unworkable because a tooltip would be displayed as the cursor was moving over unrelated text.

256. Even had there been any motivation to combine Nielsen and Malamud, neither Nielsen nor Malamud teaches a POSITA to modify HTML to include requirements of an embellished form of Windows to support Malamud's application with a reasonable expectation of success.

(b) **Limitation 72[c][i]: transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction, wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes**

content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal:

257. As discussed both generally and specifically above, there was no motivation for a POSITA to modify Nielsen's tooltips to make them part of a modified cursor image.

(c) **Limitation 72[c][ii]: wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal:**

258. As discussed both generally and specifically above, there was no motivation to display tooltips in response to movement of the cursor, and, in fact, Nielsen taught away from such a requirement, because Nielsen deliberately provided a pause so that the user must stop moving the cursor (*i.e.*, hover the cursor) over the associated text for a sufficient period of time before the tooltip was displayed. A POSITA would understand that this was to prevent the tooltip from being displayed in response to mere motion because then tooltips would appear anytime a cursor was moved over an associated object (i.e., an object having an associated tooltip) which would cause confusion and disruption to workflow, in particular when graphics were involved.

'449 Patent, Claims 1, 27, 38 and 53

259. For the same reasons that I have both generally and specifically set forth above, I disagree with Dr. Houh's assertions as to this combination rendering claims 1, 27, 38 and 53 obvious, given their similar scope and requirements.

’241 Patent, Claim 35

260. My opinions regarding the lack of motivation to combine these references, the lack of any reasonable expectation of success, and the unworkability of their combination applies also to claim 35 of the ’241 Patent. Therefore, I disagree with Dr. Houh’s opinion that this combination renders claim 35 obvious, given both the general and specific opinions I have previously expressed regarding them including in the context of claim 72.

261. Additionally, I disagree fundamentally with Dr. Houh’s “functional tautology” premise regarding claim 35, and therefore do not subscribe to any of his analysis stemming from that premise. Neither Malamud nor Nielsen discloses a cursor modification such that the modified cursor includes a visual image that tracks the modified cursor image unless read using Dr. Houh’s incorrect tautological interpretation of the claim. As I have previously discussed, Dr. Houh’s interpretation of the requirements of this claim would fail to give meaning to “tracks a movement” and “to include a visual image” claim elements, would contradict the file history, and would read out embodiments from the specification.

262. I also reiterate my disagreement with Dr. Houh’s notion that a POSITA could with reasonable expectation of success simply adapt HTML to support an information cursor to make it comparable to the specialized form of Windows for which Malamud was adapted to be used. HTML is a standard protocol, and the idea of a POSITA changing it to make such support would involve undue effort to say the least. And there is simply no teaching in Malamud to even explain how Windows is modified to support information cursors in order to support Malamud’s functionality.

F. The Combination of Nielsen and Hama Does Not Render Any Asserted Claim Obvious

263. I first offer the following general observations regarding Hama. First, there is no disclosure of an initial or a "modified cursor" in Hama. Hama is an application in which there is only one cursor on the screen, and that cursor is never modified, regardless of its position. Therefore, there are no "cursor display instructions" either for modifying the cursor image to include a visual image.

264. I disagree with Dr. Houh's statement in his ¶ 516 that "[w]hen the user moves the cursor over the cursor image, the cursor changes to the shape of a rectangle." There is no disclosure of any such "change."

265. I disagree with Dr. Houh's analysis in his ¶¶ 520-526 regarding the motivation to combine Hama with Neilsen for a number of reasons. First, as discussed previously, Nielsen's tooltip technology does not combine with cursor modification technology because Nielsen's tooltips are inherently specific to particular text and do not withstand movement of the tooltip to other text. Moreover, Hama does not disclose cursor medication because the Hama application does not disclose, require or use cursor modification, as previously discussed because there is only one cursor image used by the Hama application and there is no need to change it. Hama is an application run by the operating system of a computer. It does lend itself to being run on a browser and there is no teaching of doing so. Nor would Nielsen disclose to a POSITA how to run Hama on a browser. Hama does not disclose receiving content from another server because Hama does not disclose the need for a server at all. Additionally, Hama does not disclose any "content information including at least one cursor display instruction."

'102 Patent, Claim 72

(a) **Preamble: A method for modifying an initial**

cursor image displayed on a display of a user terminal connected to at least one server, comprising:

266. I find Dr. Houh's analysis of this asserted combination nonsensical. The HTML protocol modified according to Nielsen supports tooltips. It does not support Hama's magnification cursor application. Moreover, it makes no sense to even consider "a cross hair cursor over an image and magnified version of the image is implemented as a tooltip for content on a webpage" (Houh Report ¶ 528), as Dr. Houh suggests, because the two functions are completely disparate. A tooltip provides additional information regarding a particular text item via a specific HTML tag supported by Nielsen's modification. It does not provide magnification of the same information. Therefore, there is no motivation to incorporate Hama into Nielsen, nor would there be any reasonable expectation of success in doing so, since such a function would require yet another change to the HTML standard. Second, the on-line version of Hama that Dr. Houh posits is also a substantial modification of Hama itself, which is designed to load an image into the application and allow the user to see magnified portions of that image. Therefore, I find Dr. Houh has presented no clear and convincing evidence that the combination would even yield the preamble to the POSITA with any reasonable expectation of success. Dr. Houh's explanation at ¶¶ 534-535 of his report appears to merely be an attempt at hindsight reconstruction that is unsupported by evidence or logic.

(b) **Limitation 72[a] receiving a request at said at least one server to provide specified content information to said user terminal,**

267. The same flaws in attempting to combine Nielsen and Hama also apply to this limitation. I have already discussed how Hama is not combinable with a tooltips. I add that neither Hama nor Neilsen disclose any cursor modification, so the claimed content information, including the specific image and cursor display instructions required by other

claim elements, are wholly missing in the combination. Therefore, I find Dr. Houh has presented no clear and convincing evidence that the combination would yield this element to the POSITA with any reasonable expectation of success. Dr. Houh's explanation at ¶¶ 537-538 of his report appears to merely be an attempt at hindsight reconstruction that is unsupported by evidence or logic.

(c) **Limitation 72[b] providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image, and**

268. The same flaws in attempting to combine Nielsen and Hama also apply to this limitation. I have already discussed how Hama is not combinable with tooltips. I add that neither Hama nor Neilsen disclose any cursor modification--so the claimed content information, including the specific image and cursor display instructions required by other claim elements, are wholly missing in the combination. Therefore, I find Dr. Houh has presented no clear and convincing evidence that the combination would yield this element to the POSITA with any reasonable expectation of success. Dr. Houh's explanation at ¶¶ 542-545 of his report appears to merely be an attempt at hindsight reconstruction that is unsupported by evidence or logic.

(d) **Limitation 72[c] transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction,**

269. The same flaws in attempting to combine Nielsen and Hama also apply to this limitation. I have already discussed how Hama is not combinable with tooltips. I add that neither Hama nor Neilsen disclose any cursor modification--so the claimed content information, including the specific image and cursor display instructions required by other

claim elements, are wholly missing in the combination. Therefore, I find Dr. Houh has presented no clear and convincing evidence that the combination would yield this element to the POSITA with any reasonable expectation of success. Dr. Houh's explanation at ¶¶ 542-545 of his report appears to merely be an attempt at hindsight reconstruction that is unsupported by evidence or logic.

> (e) **Limitation 72[d] wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal, and**

270. The same flaws in attempting to combine Nielsen and Hama also apply to this element. I have already discussed how Hama is not combinable with a tooltip. I add that neither Hama nor Neilsen disclose any cursor modification--so the claimed content information, including the specific image and cursor display instructions required by other claim elements, are wholly missing in the combination. Therefore, I find Dr. Houh has presented no clear and convincing evidence that the combination would yield this element to the POSITA with any reasonable expectation of success. Dr. Houh's explanation at ¶¶ 551-554 of his report appears to merely be an attempt at hindsight reconstruction that is unsupported by evidence or logic.

> (f) **Limitation 72[e] wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal.**

271. The same flaws in attempting to combine Nielsen and Hama also apply to this limitation. I have already discussed how Hama is not combinable with tooltips. I add that

neither Hama nor Neilsen disclose any cursor modification--so the claimed content information, including the specific image and cursor display instructions required by other claim elements, are wholly missing in the combination. Therefore, I find Dr. Houh has presented no clear and convincing evidence that the combination would yield this element to the POSITA with any reasonable expectation of success. Dr. Houh's explanation at ¶¶ 555-560 of his report appears to merely be an attempt at hindsight reconstruction that is unsupported by evidence or logic.

Asserted Claims of the '449 Patent

272. The same flaws in attempting to combine Nielsen and Hama also apply to the Asserted Claims 1, 27, 28, and 53 of the '449 Patent for the same reasons I have previously discussed, namely how Hama is not combinable with tooltips and that neither Hama nor Neilsen disclose any cursor modification--so the claimed content information, including the specific image and cursor display instructions required by claim elements of these asserted claims are likewise wholly missing in the combination. Therefore, I find Dr. Houh has presented no clear and convincing evidence that the combination would yield this element to the POSITA with any reasonable expectation of success. Dr. Houh's explanation at ¶¶ 561-600 of his report repeats the prior hindsight reconstruction unsupported by evidence or logic and suffers from the same flaws previously discussed, and for the same reasons.

'241 Patent, Claim 35

(a) **Preamble: A system for modifying a cursor image, comprising:**

273. I disagree that the combination of Hama and Neilsen renders obvious the claimed system for modifying a cursor image for the same reasons I explained, namely how Hama is not combinable with tooltips and that neither Hama nor Neilsen disclose any cursor

modification. I will now discuss additional reasons that Dr. Houh has presented no clear and convincing evidence that the combination would yield this element to the POSITA with any reasonable expectation of success.

(b) **Limitation 35[a] at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image**

274. As I have previously discussed, a "tooltip" is not a cursor modification and Dr. Houh never asserts that it is. Moreover, there is no visual image that is specified in Hama as part of any cursor modification and Dr. Houh never asserts that there is. Dr. Houh has presented no clear and convincing evidence that the combination would yield this element to the POSITA with any reasonable expectation of success, given the requirements in the other claim elements for the visual image and his explanation at ¶¶ 602-609 of his report suffers from the same flaws previously discussed, and for the same reasons.

(c) **Limitation 35[b] following the receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image,**

275. As I have previously discussed, a "tooltip" is not a cursor modification and Dr. Houh never asserts that it is. Moreover, there is no included visual image that is specified in Hama as part of any cursor modification and Dr. Houh never asserts that there is. Dr. Houh has presented no clear and convincing evidence that the combination would yield this element to the POSITA with any reasonable expectation of success, given the requirements in the other claim elements for the visual image and his explanation at ¶ 610 of his report suffers from the same flaws previously discussed, and for the same reasons.

(d) **Limitation 35[c] wherein the visual image includes promotional material, and the visual image**

tracks a movement of the modified cursor

276. As I have previously discussed, a "tooltip" is not a cursor modification and Dr. Houh never asserts that it is. Moreover, there is no included visual image that is specified in Hama as part of any cursor modification and Dr. Houh never asserts that there is. In Hama, both the cursor and image are always present. Dr. Houh has presented no clear and convincing evidence that the combination would yield this element to the POSITA with any reasonable expectation of success, given the requirements in the other claim elements for the visual image and his explanation at ¶¶ 612-615 of his report suffers from the same flaws previously discussed, and for the same reasons.

G. Kojima Does Not Render Any Asserted Claim Obvious

277. Kojima presents a system in which a user "presses a magnifying button, for example, provided on the pointing device 18 for commanding the portion (the area 126) [of the display image 122 on the display 20] to be magnified." In response, the display control means reads out the coordinates (posx, posy) 129 of the cursor 121 and reads out image data from the original image data associated with the area to be magnified 126 and commands the enlarging/reducing processor 15 to generate a magnified image 125 while lowering the display density of the portion of the image below it. See Kojima, Fig. 3 and 4:61-5:33. This is also

shown in Fig. 4, in which a magnified image 125 of part of the display image 122 is displayed while the area below the enlarged image 125 is displayed with a lower density.

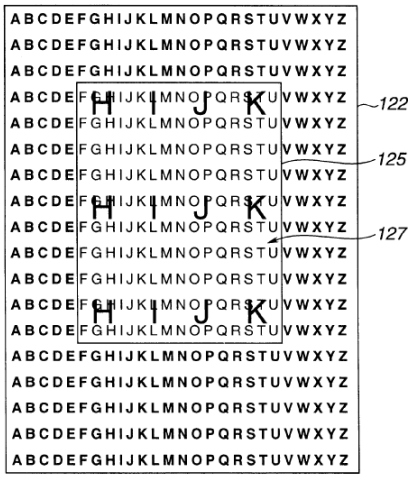


FIG.4

’102 Patent, Claim 72

(a) **Limitation 72[Preamble] A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:**

278. Kojima discloses no cursor image modification whatsoever. Therefore, I disagree with Dr. Houh’s statement that “Kojima teaches a method for modifying an initial cursor displayed on a display of a user terminal.” (Houh Report ¶¶ 627, 630) There is no disclosure of any such “modifying” and there are no instructions from a server to modify the cursor. As such, Kojima, like Hama, does not meet the preamble. As Dr. Houh acknowledges, the enlarge button needs to be depressed and kept depressed in order for the enlarged image 125 to be displayed and kept displayed while the cursor is moved. Moreover, the cursor is the arrow 121 (Houh Report ¶ 628) and there is no disclosure that it is changed whatsoever. As such, Kojima does not meet the preamble.

(b) **Limitations 72 [a] [b] [c] [d] and [e]:**

279. Regarding Dr. Houh's ¶¶ 631-648 addressing limitations 72[a]-72[b], there is no modified cursor image. Fig. 3 clearly shows that 125 is simply the image to be enlarged (aw x ah) and 125 is simply the enlarged image itself having the portion of the text displayed below it faded to create the superimposed image 127. Neither of these areas is disclosed as represented by a cursor image, much less a modified cursor image. Indeed, Kojima never once mentions a cursor image at all, much less modifying it, and never describes either 127, 125 or 126 as anything other than images or areas. There is no express or inherent request being made in Kojima for information that results in a cursor display instruction or cursor image data being sent from the server because there is nothing being sent back from any server in Kojima to modify the cursor image. Additionally, I disagree with Dr. Houh's statement in his ¶ 631 equating a GET request to a cursor display instruction because Kojima discloses no specific image that defines the shape and appearance of a cursor image. Moreover, a GET request goes from the client to the server, not the other way around.

280. Regarding Dr. Houh's ¶ 638 addressing limitation 72[c], there are no cursor display instructions transmitted from the server and processed by the client to modify the cursor image into the shape and appearance of a specific image because there is no express or inherent disclosure of cursor modification at all.

281. Regarding Dr. Houh's ¶¶ 639-648 concerning limitations 72[d] and 72[e], there is no cursor display instruction, there is no cursor modification and thus there is no specific image that is part of the cursor modification, as I have previously explained. Additionally, there is no cursor modification based upon moving the cursor over the content to which a specific image that comprises the shape and appearance of a modified cursor image corresponds. Therefore, I disagree with this element being met or being rendered obvious.

282. Dr. Houh has suggested that Kojima could be modified to eliminate "preconditioning generation of the enlarged image on the user pressing an enlarge button." But even if this change was shown by clear and convincing evidence to be motivated, and there are many reasons not to make this modification not the least of which it would hinder the readability of data that required no enlargement, this modification would not change the fact that no cursor modification exists.

'449 Patent, Claims 1, 27, 38, 53

283. I disagree with Dr. Houh's ¶¶ 650-681 regarding Asserted Claims 1, 27, 38, and 53 of the '449 Patent for the same reasons as expressed in my above statements concerning Claim 72 of the '102 Patent.

H. Rakavy Does Not Render Any Asserted Claim Obvious

284. While I agree that Rakavy discloses a system in which an advertising cursor could be displayed, I disagree that Rakavy either discloses or renders obvious '241 Patent, claim 35. There is no disclosure of including a visual image that is not fixed to the modified cursor image but tracks it in Rakavy. In connection with limitation 35[b], Dr. Houh only points to a disclosure in Rakavy of displaying bitmaps associated with an advertisement, such as a modified cursor that includes an advertiser's logo. But that image is merely a fixed component of the cursor image and is not an included visual image as required by the claim. Dr. Houh acknowledges that the modified logo "could be an advertiser's logo or other symbol." Houh Report ¶¶ 693, 695. But a fixed component of the modified cursor will not meet limitation 35[c] for all the reasons I have previously discussed in connection with Claim 35.

285. This shortcoming in Rakavy is not addressed by Dr. Houh's explanation in his ¶ 696 that "[w]hen the cursor image is modified to incorporate a visual image specified in one

of Rakavy's downloaded ad files, the visual image necessarily tracks the movement of the modified cursor image because the image is incorporated within the cursor." As I have previously discussed, the Common Specification discloses that a modified cursor image could include a visual image that is part of the modified cursor image but and also tracks its movement because the visual image has its own dynamic movement (e.g. a straw that is attached to the person holding it as part of an overall modified cursor image and rotates while the modified cursor image as a whole translates) or that is not part of the modified cursor image but rather is a satellite image that tracks the movement of the modified cursor image. Therefore, I do not find Dr. Houh's explanation regarding claims 1 and 20 of the '241 patent clear and convincing evidence of the Rakavy invalidating asserted claim 35.

I. Hama Does Not Render Claim 35 of the '241 Patent Obvious

'241 Patent, Claim 35

(a) **[35 Preamble]: A system for modifying a cursor image, comprising:**

286. There is no disclosure in Hama of a system for modifying a cursor image. There is no disclosure of an initial or a "modified cursor" in Hama. Hama is an application in which there is only one cursor on the screen, and that cursor image is never modified, regardless of its position. Therefore, there are no "cursor display instructions" for modifying the cursor image to include a visual image. Given the Court's recent ruling that the underlying content is not incorporated as part of the modified cursor image, Dr. Houh's argument at ¶ 704 fails.

(b) **Limitation 35[a]: at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image:**

287. To the extent that Hama discloses a server, such a server supplies no cursor display instruction specifying the appearance of a visual image because there is no cursor modification, and therefore no visual image to specify in connection therewith. I do not find that Dr. Houh has presented clear and convincing evidence that this limitation is disclosed or suggested by Hama.

(c) **Limitation 35[b]: following the receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image:**

288. Nothing Dr. Houh cites in connection with this limitation discloses modifying the cursor image or instructions to modify the cursor image following the receipt of the content information. There is no cursor modification after the receipt of the content information, nor does Dr. Houh even assert that there is. I do not find that Dr. Houh has presented clear and convincing evidence that this limitation is disclosed or suggested by Hama.

(d) **Limitation 35[c]: wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image.**

289. Again, I reiterate my disagreement with Dr. Houh's opinion that an included image is any fixed whole or part of a cursor image because I do not subscribe to the idea that the addition of the "tracks a movement" language by the Examiner was a functional tautology and "the visual image must track movement of the modified cursor image because it is part of the cursor and moves with it," as Dr. Houh posits in ¶ 718. As previously explained, such a view is inconsistent with the prosecution history and the Examiner's addition of the "tracks the movement" limitation. As Dr. Houh identifies no modification to Hama regarding this element, there is nothing to address on that score.

J. Anticipation of Claim 35 of the ’241 Patent by the ’102 Patent

290. I have been informed by Counsel that this issue is currently the subject of a Motion for Summary Judgment filed by Defendant Walmart. As the dispute over the priority date of the ’241 Patent is an entirely legal question, I offer no technical opinions in this regard other than that the specifications are the same and the Asserted Claim of the ’241 Patent has different requirements than the Asserted Claims of the ’102 and ’449 Patents, in the ways I have previously discussed, particularly in that the former has a dynamic requirement for the included “visual image” via the “tracks a movement” limitation that is not present for the “specific image” element in either of the latter.

K. Invalidity due to Lack of Written Description.

291. I disagree with Dr. Houh’s premise that the patent specification must disclose that a modified cursor image can include an image comprising in part previously displayed content in order to be afforded the full scope of a claim that is otherwise silent on the issue. The Common Specification provided sufficient notice that it was not limited to the preferred embodiments disclosed, and that the reader could use their own creativity and image to practice the claimed inventions, including how to create a specific image.

L. Secondary Considerations of Non-Obviousness

292. In addition to not being disclosed or rendered obvious by the prior art, I do believe that the long-felt need for Lexos Media’s claimed technology is demonstrated by the fact that the Nike-consolidated Defendants and many other online retailers including the other defendants have used it for many years and continue to do so.

293. I also believe the fact that surveys conducted in this case, show a long-felt need because customers became more comfortable buying on-line when customers could use their

modified cursors to help simulate the experience of inspecting a product to simulate the brick-and-mortar experience of inspecting a product. The technology is specifically designed to work for on-line retailers.

294. Other advantages of the technology that demonstrate its long-felt need are recited in my infringement report, so I will not repeat them here but incorporate the contents of that report into this report. My infringement report also expresses the reasons for my disagreement with Dr. Houh's premise that the Defendants are not practicing the claimed technology and therefore their usage does not demonstrate long-felt need.

295. In sum, while I do not believe that any of the asserted prior art renders any of the Asserted Claims obvious in the first instance, the long-felt need met by the claimed technology even further demonstrates the non-obviousness of the claimed technology.

VI. CONCLUSION

296. The Asserted Claims are not invalid for any of the reasons asserted by Dr. Houh.

297. The Asserted Claims are not anticipated by Adveractive's Fearless Fergie Mouse Game.

298. The Asserted Claims are not invalid for obviousness over the Adveractive's Brunswick Cosmic Bowling Game

299. The Asserted Claims are not invalid for obviousness in view of Malamud.

300. The Asserted Claims are not invalid for obviousness over Nielson and Malamud.

301. The Asserted Claims are not invalid for obviousness in view of Nielsen and Hama.

302. The Asserted Claims are not invalid for obviousness in view of Kojima.

303. Claim 35 of the '241 Patent is not invalid for obviousness in view of Rakavy.

304. Claim 35 of the '241 Patent is not invalid for obviousness in view of Hama.

305. Claim 35 of the ’241 Patent is not anticipated by the ’102 Patent.

306. The Asserted Claims are not invalid for lack of written description.

307. Secondary considerations of non-obviousness are present.

Executed January 12, 2024 at Pittsburgh, Pennsylvania



Michael I. Shamos

Exhibit A

Resume of Michael Ian Shamos

Current to June 6, 2023

Education

A.B. (1968) Princeton University (Physics). Thesis: "Gravitational Radiation Reaction." Advisor: John A. Wheeler.

M.A. (1970) Vassar College (Physics). Thesis: "An Absorber Theory of Acoustical Radiation." Advisor: Morton A. Tavel.

M.S. (1972) American University (Technology of Management).

M.S. (1973) Yale University (Computer Science).

M.Phil. (1974) Yale University (Computer Science).

Ph.D. (1978) Yale University (Computer Science). Thesis: "Computational Geometry". Thesis committee: David Dobkin, Martin H. Schultz, Stanley C. Eisenstat.

J.D. (1981) Duquesne University, *cum laude.*

Foreign Languages

French, Russian (good reading and technical translation skills, fair conversational ability).

Academic Experience

Distinguished Career Professor, Language Technologies Institute and Software and Social Systems Department, School of Computer Science, Carnegie Mellon University (2001-)
Principal Systems Scientist (1998-2001)
Principal Lecturer (2002-2003). Teaching Professor (2003-)
Faculty, Tepper School of Business, Carnegie Mellon University (1999-2004).
Co-Director, Carnegie Mellon Institute for eCommerce (1998-2004)
Vice-Chair, University Research Council (2000-2002)
Director, eBusiness Technology degree program, Carnegie Mellon (2003-2018)
Director, M.S. in Artificial Intelligence and Innovation, Carnegie Mellon (2018-)
Affiliated Faculty, CMU Center for Informed Democracy and Social-cybersecurity (2021-)
Core faculty, Privacy Engineering degree program (2013-)
Director, Universal Library, Carnegie Mellon University (1998-)
Visiting Professor, Faculty of Engineering, The University of Hong Kong (2001-2021)
Adjunct Faculty, Carnegie Mellon University, Department of Computer Science (1981-1998)

Assistant Professor, Carnegie Mellon University, Departments of Computer Science and Mathematics (1975-81), Dept. of Statistics (1978-81).

Courses taught (Carnegie Mellon):
Algorithm Design and Analysis 15-451 (Comp. Sci.)
Intellectual Capital and its Protection 45-886 (MBA)
Ecommerce Technology 20-751 (MSEC program)
Electronic Payment Systems 20-753 (MSEC program), 96-774 (MSIT program)
Ecommerce Law and Regulation 46-840 (MSEC program)
Electronic Voting 17-803
Ubiquitous Computing, 96-761 (MSIT Program)
Electronic Payment Systems (MSIT Program)
Law of Computer Technology, 17-762/17-662/17-562 (2007-)
Artificial Intelligence and Future Markets, 11-561 (2018-)

Honors and Awards

Fellow, Society of the Sigma Xi (1974-83).

IBM Fellowship, Yale University (1974–75).

SIAM National Lecturer (1977–78).

Distinguished Lecturer (computer science), University of Rochester (1978); McGill University (1979).

Duquesne University Law Review (1980–81).

Black & White Scotch Achiever's Award (first annual, 1991, for contributions to bagpipe musicography).

Industry Service Award of the Billiard and Bowling Institute of America, 1996 (for contributions to billiard history).

Billiard Worldcup Association official referee (2001-)

Editorships

Editor-in-Chief, Journal of Privacy Technology (2003- 2006).

Member of Editorial Board, *Electronic Commerce Research Journal* (2000-).

Member of Editorial Board, *Pittsburgh Journal of Technology Law and Policy* (1999-2003).

Dr. Shamos has reviewed scientific papers for *Communications of the ACM*, *Mathematical Reviews*, *IEEE Computer*, *IEEE Transactions on Computers*, *Information Processing Letters*, *Journal of the ACM* and the *Journal of Computational Physics*.

Contributing Editor, *Billiards Digest* magazine (1990-).

Patents

Co-inventor with K. Srinivasan, U.S. Patent 7,330,839, "Method and System for Dynamic Pricing," issued February 12, 2008.

Co-inventor with K. Srinivasan, U.S. Patent 7,421,278, "Method and Apparatus for Time-Aware and Location-Aware Marketing," issued September 2, 2008.

Co-inventor with K. Srinivasan, U.S. Patent 7,747,465, "Determining the Effectiveness of Internet Advertising," issued June 29, 2010.

Co-inventor with K. Srinivasan, U.S. Patent 8,195,197, "Method and Apparatus for Time-Aware and Location-Aware Marketing," issued June 5, 2012.

Co-inventor with K. Srinivasan, U.S. Patent 8,280,773, "Method and Apparatus for Internet Customer Retention," issued October 2, 2012.

Co-inventor with K. Srinivasan, U.S. Patent 9,456,299, "Method and Apparatus for Time-Aware and Location-Aware Marketing," issued September 27, 2016.

Legal Experience

Special Counsel, Reed Smith LLP (2000-2003), electronic commerce law.

Shareholder, The Webb Law Firm (1996-2000), intellectual property law. Associate (1990-95).

Private practice of law (1987-90), intellectual property

Associate, law firm of Buchanan, Ingersoll, P. C. (1985-87)(now Buchanan Ingersoll & Rooney, PC), Emerging Companies Department.

General Counsel, Carnegie Group, Inc. (1983-85), artificial intelligence company.

Private practice of law (1981-83), computer law.

Bar Admissions

Supreme Court of Pennsylvania (1981–).

United States District Court for the Western District of Pennsylvania (1981–).

United States Patent and Trademark Office (1981–).

United States Tax Court (1982–).

United States Court of Appeals for the Armed Forces (1982–).

United States Court of Appeals for the Third Circuit (1982–).

United States Supreme Court (1985–).

United States Court of Appeals for the Federal Circuit (1985–).

Expert Witness

Dr. Shamos has served as an expert witness in multiple computer software and electronic voting cases. He has participated in the cases listed below. "D" indicates deposition testimony; "R" indicates report, declaration or affidavit; "T" indicates trial testimony.

Total: 361 cases, including 281 patent, 20 electronic voting, 20 trade secret, 15 copyright, 1 criminal.
Affidavits, reports or declarations submitted in 264 cases.
Deposed in 149 cases.
Testified at trial or hearing in 49 cases.
Participated in 7 ITC investigations, 109 IPRs, 22 CBMs, 10 PGRs, and 4 reexams.

1. *C.W. Communications, Inc. v. International Research Service, Inc.*, Civil Action No. 84-890, (W.D. Pa. 1984), aff'd. Case No. 88-3331 (3d Cir., Oct. 31, 1988). Served as an expert for plaintiff publisher as to the fame of its "Computerworld" trademark. Result: permanent injunction entered against defendant. Judge McCune's Memorandum and Order states. "We accept the conclusion drawn by Dr. Shamos." Firm: Webb, Burden Robinson & Webb (now the Webb Law Firm). (D,T)

2. *E.F. Hutton, Inc. v. Gipson* (W.D. Pa. 1985). Served as an expert for defendant-counterclaimant physician as to fraud in the inducement by a computer hardware supplier. Plaintiff had provided capital financing for the purchase. Result: defendant was awarded compensatory damages + $250,000 punitive damages. (D,T)

3. *In re Comprehensive Business Systems*, 119 B.R. 573 (S.D. Ohio 1990). Served as an expert for a secured creditor in a bankruptcy case in which the creditor sought to obtain software still in development for which it had advanced over $2 million in funding. Dr. Shamos opined as to the value of the incomplete software. Result: the creditor was able to purchase the software from the Trustee for $67,500. The Court referred in its opinion to "the testimony of the eminent and impressive Dr. Shamos." (D,R,T)

4. *Levinson Steel Co. v. American Software, Inc. et al.*, Civil Action No. 96-282, W.D. Pa. (1996). Served as an expert for plaintiff in a case involving bad faith estimates of computer processing capacity resulting in delivery of an inadequate system. Result: settlement in favor of plaintiff in an undisclosed amount. Contact: Reed Smith LLP, 225 Fifth Ave., Pittsburgh, PA 15222. (D,R)

5. *ASE Limited v. INCO Alloys International, Inc.*, Civil Action No. 98-1266, (W.D. Pa. 1998). Served as an expert for defendant concerning breach of computer services contract by declaratory judgment plaintiff. Result: determination that defendant was free to seek services from a different vendor. Firm: Reed Smith LLP, 225 Sixth Ave., Pittsburgh, PA 15222. Attorney: Anthony Basinski, Esq. (D,T)

6. *Twentieth Century Fox Film Corp. v. iCraveTV*, 53 U.S.P.Q. 2d 1831 (W.D. Pa. 2000). Served as an expert for Plaintiffs concerning Internet technology used to stream video from U.S. TV stations through web sites in Canada. Result: TRO and preliminary injunction issued against defendants prohibiting continued infringement in the U.S. Firm: Reed Smith LLP. Attorney: Gregory Jordan, Esq. (T)

7. Invited testimony before the British House of Lords, Subcommittee B of the European Union Committee, April 20, 2000. Subject: European regulation of eCommerce. View testimony.

8. *Universal Studios, Inc. v. Reimerdes*, 111 F. Supp. 2d 294 (S.D.N.Y. 2000), aff'd 273 F.3d 429 (2d Cir. 2001). Served as an expert for plaintiff movie studios concerning accused software for decrypting DVDs in the first case interpreting the Digital Millennium Copyright Act. Result: permanent injunction issued in favor of plaintiffs on August 17, 2000. Contact: William Hart, Esq., Proskauer Rose LLP. View testimony. View opinion. View appellate opinion. (D,T)

9. *MercExchange, L.L.C. v. eBay, Inc. et al.*, Case No. 2:01-CV-736 (E.D. Va. 2001). Served as an expert for defendant eBay in an infringement case concerning U.S. Patent 6,202,051 for Internet auctions. Following Dr. Shamos' reports, Defendants obtained a summary judgment of noninfringement of the subject patent. On the other patents, the case went to the U.S. Supreme Court, which ruled that injunctions are not automatic in patent cases. Contact: Tim Teter, Esq., Cooley LLP. (D,R)

10. *PowerQuest Corp. v. Quarterdeck Corp. et al.*, Case No. 2:97-CV-0783 (D. Utah 1997). Served as an expert for plaintiff PowerQuest in an infringement case concerning U. S. Patents 5,675,769 and 5,706,472 for a method of resizing hard disk partitions. Dr. Shamos testified at the Markman hearing. Case settled when one of the defendants acquired plaintiff. Attorney: Gregg I. Anderson, Esq., formerly at Merchant & Gould, now an Administrative Patent Judge at the Patent Trial and Appeal Board. (R,T)

11. *Sightsound.Com Inc. v. N2K Inc. et al.*, C.A. 98-118 (W.D. Pa. 1998). Served as an expert for defendants, including a subsidiary of Bertelsmann AG, concerning validity of U.S. Patents 5,191,573 and 5,966,440 for distribution of digital audio via telecommunications lines. Case

settled. Firm: Parcher, Hayes & Snyder, (no longer in existence). Contact: Steven M. Hayes, Esq., Simmons Hanley Conroy, LLC, 112 Madison Ave., New York, NY 10016. (D,R)

12. *Freemarkets, Inc. v. B2eMarkets, Inc.*, C.A. 02-162-SLR (D. Del. 2002). Served as an expert witness for plaintiff concerning infringement of U.S. patents 6,216,114 and 6,223,167, concerning methods of conducting electronic auctions. Case settled two weeks after expert attended a demonstration of the accused product. Contact: D. Michael Underhill, Esq., Boies, Schiller & Flexner, LLP, Washington, DC.

13. *Lifecast.com, Inc. v. ClubCorp, Inc.*, AAA Case No. 71Y1170076301 (Dallas, TX). Served as an expert witness for respondent in a case alleging copyright infringement of Internet websites. Testified at arbitration. Result: Complainant's claims denied; award for respondent on counterclaims and for attorney's fees. Contact: Bill Whitehill, Esq., Gardere Wynne Sewell LLP, 1601 Elm St., Dallas, TX 75201. (T)

14. *IP Innovation LLC v. Thomson Learning, Inc. et al.*, Case H-02-2031 (S.D. Tex. 2002). Served as an expert for defendant The Princeton Review, Inc. concerning alleged infringement of U.S. Patent 4,877,404 relating to online delivery of educational courses. Summary judgment of non-infringement obtained for defendant after favorable Markman proceeding. Contact: Peter Vogel, Esq., Gardere Wynne Sewell LLP, 1601 Elm St., Dallas, TX 75201. (R)

15. *Starpay.com LLC et al. v. Visa International Service Association et al.*, Case 3-03-CV-976-L (N.D. Tex. 2003). Served as an expert for defendant Visa concerning alleged infringement of U.S. Patent 5,903,878 relating to online authentication of credit card customers. Dr. Shamos provided the court with a Markman tutorial in 2004 and a non-infringement and invalidity declaration in 2008. Case settled in February 2008. Contact: Stanley Young, Esq., Covington & Burling LLP, 333 Twin Dolphin Drive, Suite 700, Redwood Shores, CA 94065. (D,R,T)

16. *Safeclick LLC v. Visa International Service Association et al.*, Case C-03-5865 (N.D. Cal. 2003). Served as an expert for defendant Visa concerning alleged infringement of U.S. Patent 5,793,028 relating to online authentication of credit card customers. Summary judgment of noninfringement granted for Visa based on expert reports, affirmed after appeal to the Federal Circuit. Contact: Stanley Young, Esq., Covington & Burling LLP, 333 Twin Dolphin Drive, Suite 700, Redwood Shores, CA 94065. (D,R)

17. *Wells Fargo Bank Minnesota, NA et al. v. UBS Warburg Real Estate Securities, Inc.*, Case 02-2849 (192d Judicial District, Dallas Cty., Tex, 2002) and *LaSalle Bank, NA et al. v. UBS Warburg Real Estate Securities, Inc.*, Case 02-2899-G (134th Judicial District, Dallas Cty., Tex, 2002). Served as an expert for defendant UBS Warburg in an electronic discovery matter involving a case of first impression regarding Texas Discovery Rule 196.4 allocating costs of discovery of electronic records. Firm: Gardere Wynne Sewell LLP, 1601 Elm St., Dallas, TX 75201. Contact: Dawn Estes, Esq., Taber, Estes Okon Thorne & Carr PLLC, 3811 Turtle Creek Blvd., Suite 2000, Dallas, TX 75219. (D, R)

18. *American Association of People with Disabilities et al. v. Shelley et al.*, Case No. CV04-1526 FMC (PJWx) (C. D. Calif., 2004). Served as an expert for plaintiff AAPD, which has brought a claim against the California Secretary of State that requiring DRE voting machines to be equipped with audit trails violates the rights of disabled persons. Plaintiffs' application for TRO and preliminary injunction denied. Firm: Howrey LLP, (no longer in existence). Attorney John E. McDermott is now a Magistrate Judge in the Central District of California. (R)

19. *Paul Ware v. Target Corp.*, CA 4:03-CV-0243-HLM (N.D. Ga., 2003). Served as an expert for defendant Target Corp., a large retailer, in a case involving U.S. patent 4,707,592, claiming a method of conducting credit card sales. Case settled during Markman preparations. Contact: Thomas P. Burke, Esq., Ropes & Gray LLP, 1211 Ave. of the Americas, New York, NY 10036.

20. *Viad Corp., v. C. Alan Cordial et al.*, No. 03-1408 (W.D. Pa., filed 2003). Served as an expert for defendants in an action alleging misappropriation of trade secrets relating to software for automating certain aspects of the exhibit booth and trade show industries. Status: case settled immediately before trial, after plaintiff's unsuccessful Daubert challenge of Dr. Shamos. Contact: Barbara Scheib, Esq., Cohen & Grigsby, P.C., 11 Stanwix Street, Pittsburgh, PA 15222. (D,R,T)

21. *Schade et al. v. Maryland State Bd. of Elections et al.*, Case No. C0497297 (Cir. Ct. Anne Arundel Cty. Md., 2004). Served as an expert for defendants in a case challenging the decision of the Board of Elections not to decertify Diebold AccuVote system. Result: Plaintiff's motion for preliminary injunction denied, upheld on appeal. Judge Manck's opinion cites Dr. Shamos' testimony as follows: "the court finds Dr. Shamos, Defendants' expert, to be the true voice of reason and the most credible expert in this matter." The denial of preliminary injunction was upheld by the Maryland Court of Appeals, which commented extensively on Dr. Shamos' testimony in its opinion. Contact: Michael Berman, Esq., (formerly Maryland Deputy Attorney General), Rifkin, Weiner, Livingston, Levitan & Silver, LLC. (R,T)

22. *Wexler et al. v. Lepore et al.*, Case No. 04-80216 (CIV-COHN) (S.D. Fla. 2004) . Served as an expert for defendants, various Florida election supervisors against claim by U.S. Congressman Robert Wexler that use of DRE voting machines without paper audit trails violates the equal protection clause of the U.S. Constitution. Dr. Shamos testified on Oct. 19, 2004. The trial judge rendered judgment in favor of defendants on Oct. 25. Contact: Jason Vail, Esq., then Assistant Attorney General, Department of Legal Affairs, The Capitol, Tallahassee, FL, now at Allen Norton & Blue, PA. Opinion. (T)

23. *Siemens Information and Communication Networks, Inc. v. Inter-Commercial Business Systems, Inc.*, Civil Action 3-03CV2171-L (N.D. Tex. 2004). Served as an expert for defendant against claim of copyright infringement based on reverse-engineered firmware resident in telephone switching systems. Status: case settled shortly after the submission of Dr. Shamos's rebuttal report on non-infringement. Contact: Bill Whitehill, Esq., Gardere Wynne Sewell LLP, 1601 Elm St., Dallas, TX 75201. (R)

24. *Soverain Software LLC v. Amazon.com, Inc.*, C.A. No. 6:04-CV-14 (E.D. Tex. 2004). Served as an expert for plaintiff regarding asserted patents 5,708,780, 5,715,314 and 5,909,492,

relating to the shopping cart paradigm of electronic commerce. Status: settled in Sept. 2005 with Amazon paying $40 million to Soverain and taking a license under the patents in suit. Contact: Ognian Shentov, Esq., Jones Day, 222 E. 41st St., New York, NY 10017. (D,R)

25. *CollegeNET, Inc. v. The Princeton Review, Inc.*, Case '051205KI (D. Ore. 2005). Served as an expert for defendant The Princeton Review, Inc. concerning alleged infringement of U.S. Patent 6,460,042 relating to online delivery of educational courses. Case settled in December 2007. Contact: Peter Vogel, Esq., Gardere Wynne Sewell LLP, 1601 Elm St., Dallas, TX 75201. (R)

26. *CombineNet, Inc. v. VerticalNet. Inc.*, GD 05-018911 (Ct. Common Pleas, Allegheny Cty., PA). Served as an expert for plaintiff in an action for trade secret misappropriation relating to a system for conducting electronic auctions. Plaintiff won in arbitration. Contact: Mark Knedeisen, Esq., K&L Gates LLP, 210 Sixth Avenue, Pittsburgh, PA 15222-2613. (T)

27. *RealSource, Inc. v. Best Buy Co., Inc. et al.*, No. A04-CA-771-LY (W.D. Tex.). Served as an expert for defendant Lowe's Companies, Inc., against a claim of infringement of U.S. patent 5,732,136 relating to validation of point-of-sale debit card transactions. Provided a tutorial to the Court during Markman proceedings concerning debit card technology. Defendants won summary judgment of non-infringement, affirmed by the Federal Circuit. Defendants Lowe's settled and was not involved in the appeal. Contact: Michael S. Connor, Esq., Alston & Bird LLP, Bank of America Plaza, 101 South Tryon St, Suite 4000, Charlotte, NC 28280-4000. (R,T)

28. *DE Technologies, Inc. v. Dell, Inc. et al.*, No. 7:04-CV-00628 (W.D. Va.). Served as an expert for plaintiff DE Technologies, Inc., asserting a claim of infringement of U.S. patents 6,460,020 and 6,845,364, relating to a system for implementing international sales transactions. Case settled after and adverse summary judgment. However, the Court used Dr. Shamos' testimony in its opinion. Contact: David Marder, Esq., Robins Kaplan Miller & Ciresi LLP, 800 Boylston Street, 25th Floor, Boston, MA 02199. (D,R,T)

29. *Eaton Power Quality Corp. v. J.T. Packard & Associates*, No. 05 C 3545 (N.D. Ill. 2005). Served as expert for plaintiff in a claim of software copyright infringement involving a system for configuring industrial uninterruptible power supplies. Case settled in early 2007. Firm: Dewey & LeBoeuf. Contact: Keith P. Schoeneberger, Esq., Pasulka & Associates PC. (D,R)

30. *Taylor et al. v. Onorato et al.*, CA 06-481 (W.D. Pa 2006). Served as an expert for Commonwealth of Pennsylvania defendants in an action seeking to enjoin the use of electronic voting machines in Allegheny County, PA. Dr. Shamos testified at length in a preliminary injunction hearing held April 25-27, 2006 before Judge Lancaster. The injunction was denied on April 28. Suit was subsequently dropped by plaintiffs. Contact: Mark Aronchick, Esq., Hangley Aronchick Segal Pudlin & Schiller, One Logan Square, 18th & Cherry Streets, 27th Floor, Philadelphia, PA 19103. (T)

31. *FedEx Ground Package System, Inc. v. Applications International Corp.*, CA No. 03-1512 (W.D. Pa.). Served as an expert for defendant counterclaiming for copyright infringement and

trade secret misappropriation relating to software for maintaining occupational health and safety records. Dr. Shamos's testimony was excluded because he was unable to perform a side-by-side comparison of the original and accused works. Case has settled. Contact: Ronald Hicks, Esq., Meyer, Unkovic & Scott LLP, 1300 Oliver Bldg., Pittsburgh, PA 15222. (D,R)

32. *NetMoneyIN, Inc. v. Verisign, Inc. et al.*, Cv-01-441-TUC-RCC (D. Ariz.). Served as an expert for defendants Bank of America Merchant Services, Inc. and Wells Fargo Bank, N.A., who are accused of infringing claim 23 of U.S. patent 5,822,737, relating to an electronic payment system. Wells Fargo and Bank of America have settled. Contact: K&L Gates LLP, State Street Financial Center, One Lincoln Street, Boston, Massachusetts 02111-2950. (D,R)

33. *Contois Music Technology, LLC v. Apple Computer, Inc.*, 2:05-CV-163 (D. Vermont, filed Feb. 13, 2006). Served as an expert for plaintiff in an action alleging that the Apple iTunes software infringed U.S. patent 5,864,868, relating to a method for selecting music from an electronic catalog. Case settled after a favorable Markman order. Contact: John Rabena, Esq., Sughrue Mion PLLC, 2100 Pennsylvania Avenue, NW, Suite 800, Washington, DC 20037-3213.

34. *Banfield et al. v. Cortés*, 442 MD 2006 (PA Cmwlth. Ct.). Served as an expert for defendant Secretary of the Commonwealth of Pennsylvania in an action to compel the decertification of all electronic voting machines in Pennsylvania. In February 2008 Defendant successfully repelled an emergency motion for preliminary injunction. In August 2012, the Court denied Petitioners' motion for summary judgment, citing Dr. Shamos's expert report extensively. In October 2013, the Commonwealth Court granted summary judgment for the Secretary. The Pennsylvania Supreme Court affirmed on February 18, 2015. Contact: Steven E. Bizar, Esq., Buchanan Ingersoll & Rooney PC, Two Liberty Place, 50 S. 16th St., Philadelphia, PA 19102-2555. (D,R)

35. *Remote Inventory Systems, Inc. v. WESCO Distribution, Inc.*, AAA Case No. 55 171 00493 05 (Pittsburgh, PA). Served as an expert for respondent in a case alleging misappropriation of trade secrets in a computerized inventory system. Contact: Kirsten Rydstrom, Esq., Reed Smith LLP, 225 Fifth Ave., Pittsburgh, PA 15222. (D,R)

36. *SyncSort, Inc. v. Innovative Routines International, Inc.*, Civil Action No. 04-3623 (WHW) (D. New Jersey). Served as an expert witness for defendant in an action alleging misappropriation of trade secrets embodied in plaintiff's Unix sorting software. Dr. Shamos testified at a bench trial in January 2011. Case settled after an appeal to the Third Circuit was filed. Contact: David R. Fine, Esq., K&L Gates LLP, 17 N. Second Street, 18th Floor, Harrisburg, PA 17101-1507. (D,R,T)

37. *Digital Impact, Inc. v. Bigfoot Interactive, Inc.*, Civil Action C05 00636 (CW) (N.D. Cal.). Served as an expert witness for defendant in an action alleging infringement of U.S. Patent 6,449,634, relating to determining which file formats can be processed by an email client. Result: defendant obtained summary judgment of non-infringement, upheld by the Federal Circuit. Contact: Arthur Dresner, Esq., Duane Morris LLP, 1540 Broadway, New York, NY 10036. (D,R)

38. *Prism Technologies LLC v. Verisign, Inc. et al.*, CA 05-214-JJF (D. Del.). Served as an expert for plaintiff in an action alleging infringement of U.S. Patent 6,516,416, relating to use of a hardware key for authentication over networks. Defendants prevailed on summary judgment of non-infringement, which was upheld on appeal. Firm: Robins Kaplan Miller & Ciresi LLP. Contact: Dirk D. Thomas. Esq., McKool Smith, 1999 K Street, N.W., Suite 600, Washington, DC 20006. (R)

39. *AdvanceMe, Inc. v. RapidPay LLC et al.*, Civil Action 6:05-cv-424 LED (E.D. Tex., Tyler Division). Served as an expert witness for plaintiff in an action alleging infringement of U.S. Patent 6,941,281, relating to an automated payment system for dividing credit card proceeds between a merchant and another party. Testified at a bench trial in July 2007 before Judge Davis, who held the patent infringed but invalid for obviousness. Firm: Paul, Hastings LLP, Five Palo Alto Sq., Palo Alto, CA 94306. Contact: Ronald S. Lemieux, Esq., Singularity LLP, 275 Shoreline Drive, Redwood Shores, CA 94065. (D,R,T)

40. *IBM Corp. v. Amazon.com, Inc.*, CA 9:06-CV-242-RHC (E.D. Tex., Lufkin Div.) and *IBM Corp. v. Amazon.com, Inc.*, CA 6:06-CV-452-LED (E.D. Tex., Marshall Div.). Served as an expert for IBM in related actions alleging infringement of U.S. Patents 5,319,542, 5,442,771, 5,446,891, 5,796,967 and 7,072,849, all concerning methods of conducting electronic transactions, and a counterclaim for infringement of U.S. Patent 5,826,258, concerning a method for querying semistructured data. Case settled early in discovery when the parties cross-licensed each other's patents. Contact: Mark J. Ziegelbein, Esq., Dentons US LLP, 2000 McKinney Ave., Suite 1900, Dallas, TX 75201-1858.

41. *The MathWorks, Inc. v. COMSOL AB et al.*, CA 6:06-CV-334 (E.D. Tex., Tyler Division). Served as an expert for plaintiff The MathWorks, providers of the mathematical software system MATLAB, in an action alleging copyright infringement and infringement of U.S. Patents 7,051,338 and 7,181,745 concerning methods for invoking object methods from external environments. After trial, the case settled with defendant admitting infringement, paying $12,000,000 in damages and waiving appeal rights. Contact: Krista Schwartz, Esq., Jones Day, 77 W. Wacker Dr., Chicago, IL 60601-1692.

42. *Avante Int'l. Technology Corp. v. Diebold Election Systems et al.*, Case 4:06-CV-0978 TCM (E.D. Mo., Eastern Division). Served as an expert for defendants Sequoia Voting Systems and Premier Election Systems in an action alleging infringement of U.S. Patents 6,892,944, 7,036,730 and 7,077,313 concerning electronic voting technology. Dr. Shamos testified at a 5-day trial in February 2009. Result: The jury found Plaintiff's asserted claims invalid as anticipated and obvious. Contact: Peter T. Ewald, Esq., Oliff & Berridge, PLC, 277 South Washington Street, Suite 500, Alexandria, VA 22314. (D,R,T)

43. *Netcraft Corp. v. eBay, Inc. and PayPal, Inc.*, Case 3:07-cv:00254-bbc (W.D. Wisc. 2007). Served as an expert for defendants in an action alleging infringement of U.S. Patents 6,351,739 and 6,976,008 concerning methods of billing for ecommerce transactions over the Internet. Defendants were granted summary judgment of non-infringement on Dec, 10, 2007, upheld on appeal. Firm: Irell & Manella LLP, 180 Avenue of the Stars, Los Angeles, CA

90067. Contact: Kenneth Weatherwax, Esq., Goldberg, Lowenstein & Weatherwax LLP, 1925 Century Park East, Suite 2120, Los Angeles, CA 90067.

44. *ACLU of Ohio et al. v. Brunner et al.*, Case 1:09 CV 0145 (N.D. Ohio 2008). Served as an expert witness in an action alleging that the use of central count optical scan voting should not be permitted in Cuyahoga County, as had been ordered by the county board of elections. A preliminary injunction was denied in February 2008. The case became moot and was dismissed in May 2008 when the Ohio Legislature granted by statute the relief requested by plaintiff, prohibiting the use of central count opscan in Cuyahoga County. Contact: Meredith Bell-Platts, Esq., ACLU Voting Rights Project, 2600 Marquis One Tower, Atlanta, GA 30303. (R)

45. *Ariba, Inc. v. Emptoris, Inc.*, Civil Action 9:07-CV-90-RHC (E.D. Tex. 2007). Served as an expert for Ariba in an action alleging infringement of U.S. Patents 6,216,114 and 6,499,018, relating to the conduct of electronic auctions. Dr. Shamos testified in a jury trial on infringement and validity. Result: verdict finding all asserted claims valid and willfully infringed. Contact: Robert Fram, Esq., Covington & Burling LLP, One Front St., San Francisco, CA 94111. (D,R,T)

46. *EpicRealm Licensing, LP v. Autoflex Leasing Inc. et al.*, CA 5:07-CV-125 (E.D. Tex. 2005). Served as an expert for defendant Herbalife International of America, Inc. in an action alleging infringement of U.S. patents 5,894,554 and 6,415,335, relating to a system for managing generation of dynamic Internet web pages. All original defendants settled. See also the Oracle case below. Contact: Ognian Shentov, Esq., Jones Day, 222 E. 41st St., New York, NY 10017. Also served as an expert for defendant FriendFinder in a separate trial in this action. After a jury trial before Judge Folsom, the patents were found valid and infringed, but the jury awarded only $1.1M, the smallest amount testified to by defendant's damages expert. Contact: Michael J. Sacksteder, Esq., Fenwick & West LLP, 555 California St., San Francisco, CA 94104. (D,R,T)

47. *Oracle Corporation v. EpicRealm Licensing, LP*, CA 2-06-414 (D. Del. 2006), later *Oracle Corporation v. Parallel Networks, LLC.* Served as an expert for Oracle in a declaratory judgment alleging invalidity of U.S. patents 5,894,554 and 6,415,335, relating to a system for managing generation of dynamic Internet web pages. The patents are the same as those in the EpicRealm case, above. Oracle obtained summary judgment of non-infringement, reversed on appeal to the Federal Circuit. Case settled in May 2011 on the eve of trial. Firm: Kilpatrick Townsend & Stockton, LLP, 379 Lytton Ave., Palo Alto. CA 94301. Contact: Theodore T. Herhold, Singularity LLP, 275 Shoreline Drive, Redwood Shores, CA 94065. (D,R)

48. *Saulic v. Symantec Corporation et al.*, Case No. SA CV 07-610 AHS (C.D. Cal., Santa Ana Division, 2007). Served as an expert for defendant Symantec in a removal action alleging violation of California Civil Code §1747.8, relating to the collection of personal identification information in connection with credit card transactions. Case settled. Original firm: Heller Ehrman. Contact: Chad R. Fuller, Esq., Troutman Sanders LLP, 11682 El Camino Real, Suite 400, San Diego, CA 92121. (R)

49. *Gusciora et al. v. McGreevey et al.* (now *Gusciora v. Christie*), Docket No. MER-L-2691-04 (N.J. Super., Mercer County). Served as an expert for defendants, including the Governor and Attorney General of New Jersey, in a case alleging that the state's AVC Advantage voting machines are unconstitutionally insecure. A bench trial was held from January-May, 2009 before Judge Linda Feinberg. The Court's opinion adopts Dr. Shamos' testimony and comments on it extensively. Affirmed on appeal in October 2013. Contact: Leslie Gore, Esq., Asst. Atty. Gen'l., 25 Market Street, P.O. Box 112, Trenton, NJ 08625. (D,R,T)

50. *R.R. Donnelley & Sons Company v. Quark, Inc. et al.*, C.A. No. 06-00032-JJF (D. Del.). Served as an expert for plaintiff R.R. Donnelley in a case alleging infringement of U.S. Patents 6,205,452, 6,327,599, 6,844,940 and 6,952,801, relating to book assembly, imposition of graphics and control of electronic presses. Case has settled. Contact: Stuart W. Yothers, Esq., Ropes & Gray LLP, 1251 Avenue of the Americas, New York, NY 10020.

51. *MOAEC, Inc. v. Pandora Media, Inc. et al.*, Case No. 07-cv-654-bbc (W.D. Wisc.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 5,969,283, 6,232,539, 6,953,886 and 7,205,471, relating to systems for organizing and retrieving digital music. Two defendants obtained summary judgment of noninfringement; the remaining defendant settled. Contact: Joshua Krumholz, Esq., Holland & Knight, LLP, 10 St. James Avenue, 11th Floor, Boston, MA 02116. (D,R)

52. *Web.com, Inc. v. The Go Daddy Group, Inc.*, Case No. CV07-01552-PHX-MHM (D. Ariz.). Served as an expert for defendant in a case alleging infringement of U.S. Patents 6,654,804, 6,789,103, 6,842,769 and 6,868,444, relating to methods for managing configuration of web servers and provision of Internet services. Case has settled. Firm: Wilson Sonsini Goodrich & Rosati, 650 Page Mill Road, Palo Alto, CA 94304. Contact: Richard G. Frenkel, Esq., Latham & Watkins LLP, 140 Scott Drive, Menlo Park, CA 94025.

53. *Hummel et al. v. Dynacraft BSC, Inc. et al.*, Case No. CV 052214 (Cal. Super. Marin Cty.). Served as an expert for defendants in an action alleging breach of contract for web hosting services. Dr. Shamos provided four hours of trial testimony. Result: verdict for the defense. Contact: Joe B. Harrison, Esq., Gardere Wynne Sewell LLP, 1601 Elm St., Suite 3000, Dallas, TX 75201. (T)

54. *Tegg Corp. v. Beckstrom Electric Co. et al.*, Civil Action No. 2:08-CV-00435-NBF (W.D. Pa.). Served as an expert for defendants in a case alleging infringement of copyright in computer software for administering field maintenance of electrical equipment. Case has settled. Original firm: Reed Smith LLP. Contact: Richard D. Kelley, Esq., Bean Kinney & Korman, 2300 Wilson Blvd., Suite 700, Arlington, VA 22220.

55. *Cordance Corporation v. Amazon.com, Inc.*, Civil Action No. 06-491-MPT (D. Del.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 5,862,525, 6,088,717 and 6,757,710, relating to an infrastructure for conducting online transactions. In August 2009 a jury found the '717 patent valid but not infringed and the '710 patent infringed but invalid. The finding of invalidity of the '710 patent was vacated by the Court on judgment as a matter of law. The Federal Circuit reversed and reinstated the jury's finding. Contact: Robert

M. Abrahamsen, Esq., Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210. (D,R, T)

56. *Anthurium Solutions, Inc. v. MedQuist, Inc. et al.*, Case No. 2:07-vcv-484 (DF/CE) (E.D. Tex.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patent 7,031,998, relating to a distributed workflow system. Case settled ten days after responsive expert reports were served. Contact: Joshua Krumholz, Esq., Holland & Knight, LLP, 10 St. James Avenue, 11th Floor, Boston, MA 02116. (R)

57. *Performance Pricing, Inc. v. Google, Inc. et al.*, Case No. 2:07-cv-432(LED) (E.D. Tex.). Served as an expert for defendant Yahoo! in a case alleging infringement of U.S. Patent 6,978,253, relating to determining prices for items sold online. Case has settled as to defendant Yahoo!. Contact: Michael A. Jacobs. Esq., Morrison & Foerster LLP, 425 Market Street, San Francisco, CA 94105. Also served as an expert for remaining defendants Google and AOL. In March 2010 the Court granted defendants' motion for summary judgment of noninfringement, affirmed by the Federal Circuit. Contact: David A. Perlson. Esq., Quinn Emanuel Urquhart & Sullivan, LLP, 50 California Street, San Francisco, CA 94111. (D,R)

58. *Nationwide Power Solutions, Inc. et al., v. Eaton Electrical Inc.*, Case No. CV-8:07-0883-JVS (C.D. Cal.). Served as an expert for defendant/counterclaimant Eaton in a case alleging antitrust violations by Eaton arising out of proprietary servicing software in its uninterruptible power supplies. Case has settled. Contact: James L. Day, Esq., Latham & Watkins LLP, 505 Montgomery Street, Suite 2000 San Francisco, CA 94111.

59. *CBS Interactive, Inc. v. Etilize, Inc.*, Case No. C -6-05378 (MHP) (N.D. Cal.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 6,714,933 and 7,082,426, relating to web crawling technology to aggregate product information. Defendant consented to an injunction against further infringement and the case settled. Firm: Winston & Strawn, LLP, 101 California Street, San Francisco, CA 94111. Contact: Glenn E. Westreich, Esq., Hayes and Boone, LLP, 2033 Gateway Place, San Jose, CA 95110.

60. *Geographic Services, Inc. v. Anthony Collelo*, Case 2008-9961 (Fairfax Cty., Va.). Served as an expert for plaintiff in a case alleging misappropriation of trade secrets involving determining and proofing geographic names as applied to maps and satellite imagery. Case was dismissed by Judge Ney on technical legal grounds at the close of Plaintiff's case. The Virginia Supreme Court reversed and remanded the case for further proceedings. Case has settled. Contact: Mark W. Wasserman, Esq., Reed Smith LLP, 3110 Fairview Park Drive, Suite 1400, Falls Church, VA 22042. (D,R,T)

61. *ODS Technologies, LP v. Magna Entertainment Corp., et al.*, CV 07-03265 DDP (D. Del.). Served as an expert for defendants in a case alleging infringement of U.S. Patents 5,830,068, 6,004,211, 6,089,981, 6,554,709 and 7,229,354, relating to off-track wagering systems and methods for restricting wagering based on location. Dr. Shamos submitted a declaration in support of summary judgment. Case settled before expert reports were

due. Contact: Virginia DeMarchi, Esq., Fenwick & West, LLP, 801 California Street, Mountain View, CA 94041. (R)

62. *Gannett Satellite Information Network, Inc. v. Office Media Network, Inc.*, C.A. No. 08-96-GMS (D.Del.). Served as an expert for defendant in a case alleging infringement of U.S. Patents 6,288,688, 6,622,826, 6,981,576 and 7,270,219, relating to display of advertising information on screens in elevators. Case settled shortly after Dr. Shamos's deposition. Contact: Steven R. Trybus, Esq., Jenner & Block LLP, 353 N. Clark St., Chicago, IL 60654. (D,R)

63. *Avante Int'l. Technology Corp. v. Premier Election Solutions et al.*, Case 4:06-CV-091367-ERW (E.D. Mo., Eastern Division). Served as an expert for defendants Sequoia Voting Systems and Premier Election Systems in an action alleging infringement of U.S. Patents 7,422,150, and 7,431,209 concerning electronic voting technology. Case settled in December 2009. Contact: Peter T. Ewald, Esq., Oliff & Berridge, PLC, 277 South Washington Street, Suite 500, Alexandria, VA 22314. (R)

64. *Accenture Global Services GmbH et al. v. Guidewire Software, Inc.*, Civ. No. 07-826-SLR (D. Del.). Served as an expert for Accenture in a case alleging misappropriation of trade secrets and infringement of U.S. Patents 7,013,284 and 7,017,111, relating to automated insurance claim handling. The District Court found the asserted system claims invalid under 35 U.S.C. § 101, affirmed by the Federal Circuit at 2011-1486. Case settled in Oct. 2011. Original firm: Morrison & Foerster, LLP. Contact: L. Scott Oliver, Esq., K&L Gates LLP, 630 Hansen Way, Palo Alto, CA 94304. (D,R)

65. *Alexsam, Inc. v. Evolution Benefits, Inc. et al.*, Case No. 2:07cv288-TJW (E.D. Tex.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patent 6,000,608, relating to multifunction epayment cards. Case settled four weeks after Dr. Shamos's deposition. Original firm: Wolf, Greenfield & Sacks, P.C. Contact: James Foster, Esq., Hayes Messina Gilman Hayes LLC, 200 State St., 6th Floor, Boson, MA 02109. (D,R)

66. *Motivation Innovations, LLC v. DSW Inc. et al.*, C.A. No. 08-334-SLR (D. Del.). Served as an expert for defendant DSW, Inc. in a case alleging infringement of U.S. Patent 5,612,527, relating to a system for redeeming discount offers at point of sale. Case has settled. Contact: Drew Blatt, Ph.D., Esq., Wood, Heron & Evans LLP, 2700 Carew Tower 441 Vine Street Cincinnati, Ohio 45202.

67. *Discovery Communications, Inc. v. Amazon.com, Inc.*, C.A. No. 09-178-ER (D. Del.). Served as an expert for plaintiff Discovery Communications in a case alleging infringement of plaintiff's U.S. Patents 5,986,690, 6,657,173, 7,298,851, 7,299,501, 7,336,788 and 7,401,286, relating to electronic book viewers and electronic book selection and delivery systems, and defendant-counterclaimant's U.S. Patents 6,029,141 and 7,337,133, relating to Internet-based customer referral systems. Case has settled. Contact: Brent P. Lorimer, Esq., Workman | Nydegger, 1000 Eagle Gate Tower, 60 East South Temple Salt Lake City, UT 84111.

68. *Amazon.com v. Discovery Communications, Inc.*, No. 2:09-cv-0681-RSL (W.D. Wash.). Served as an expert for defendant Discovery Communications in a case alleging

infringement of U.S. Patents 6,006,225 and 6,169,986, relating to refinement of online search queries, and U.S. Patents 6,266,649 and 6,317,722., relating to generation of online recommendations. Case has settled. Contact: Brent P. Lorimer, Esq., Workman | Nydegger, 1000 Eagle Gate Tower, 60 East South Temple Salt Lake City, UT 84111.

69. *IMX, Inc. v. E-Loan, Inc. and Banco Popular North America, Inc.*, No. 09-cv-20965 (S.D. Fla.). Served as an expert for defendants in a case alleging infringement of U.S. Patent 5,995,947, relating to an interactive loan processing and mortgage trading system. Case was stayed pending reexamination. On appeal after reexamination, all but four of the asserted claims were cancelled. In CBM2015-00012, all asserted claims were found unpatentable under §101. Case has settled. Contact: Samuel A. Lewis, Esq., Feldman Gale, PA, One Biscayne Tower, 30th Floor, 2 South Biscayne Blvd., Miami, FL 33131. (D,R)

70. *Soverain Software LLC v. CDW Corp. et al.*, C.A. No. 6:07-CV-511 (E.D. Tex.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 5,715,314, 5,909,492, and 7,272,639, relating to methods of conducting electronic commerce. All defendants settled except Newegg, Inc. Dr. Shamos testified on validity at a jury trial in April 2010. Result: all claims valid; the '314 and '492 claims infringed, with a running royalty assessed against Newegg. After trial, the Court found the '639 patent infringed as a matter of law. In January 2013 the Federal Circuit found the asserted claims obvious as a matter of law, The Supreme Court declined review. Contact: Ognian Shentov, Esq., Jones Day, 222 E. 41st St., New York, NY 10017. (D,R,T)

71. *Netcraft Corp. v. AT&T Mobility LLC et al.*, C.A. No. 07-651-GMS (D. Del.). Served as an expert for defendants in a case alleging infringement of U.S. Patents 5,974,221, 6,351,738 and 6,411,940, relating to electronic commerce billing methods. Case settled two months after Dr. Shamos's deposition. Contact: H. Jonathan Redway, Esq., Dickinson Wright PLLC, 1875 Eye St., Washington, DC 20006. (D,R)

72. *ValueClick, Inc. v. Tacoda, Inc., AOL, LLC and Platform-A, Inc.*, Case No. 2:08-cv-04619 DSF (JCx) (C.D. Cal.). Served as an expert for defendants in a case alleging infringement of U.S. Patents 5,848,396 and 5,991,735, relating to software and methods for creating psychographic profiles of network users. Case settled in May 2010. Original firm: Orrick, Herrington & Sutliffe, LLP. Contact: Paul R. Gupta, Esq., DLA Piper, 1251 Avenue of the Americas, New York, NY 10020.

73. *SP Technologies, Inc. v. Garmin Limited et al.*, Civil Action No. 08-CV-3248 (N.D. Ill.). Served as an expert for defendant TomTom, Inc. in a case alleging infringement of U.S. Patent 6,784,873, relating to graphical keyboards on touchscreens. Defendants prevailed on summary judgment of invalidity. Contact: Brian Pandya, Esq., Wiley Rein LLP, 1776 K Street NW, Washington DC 20006. (D,R)

74. *ePlus, Inc. v. Lawson Software, Inc.*, Civil Action No. 3:09-cv-620 (E.D. Va.). Served as an expert for defendant in a case alleging infringement of U.S. Patents 6,023,683, 6,055,516 and 6,505,172, relating to electronic procurement systems. Dr. Shamos testified at a jury trial in Richmond in January 2011. Result: No infringement as to most accused configurations;

infringement as to others. Past damages were precluded by the Court. On appeal. the Federal Circuit found the system claims invalid as indefinite. Contact: Daniel McDonald, Esq., Merchant & Gould PC, 3200 IDS Center, 80 South Eighth Street, Minneapolis, MN, 55402. (D,R,T)

75. *Bed Bath & Beyond, Inc. v. Sears Brands*, LLC, Civil Action 08 CV 5839-SDW-MCA (D. N.J.). Served as an expert for plaintiff in a declaratory judgment action regarding alleged infringement of U.S. Patent 5,970,474, relating to retail gift registry systems. Case has settled. Contact: William Mentlik, Esq., Lerner David Littenberg, Krumholz & Mentlik LLP, 600 South Avenue West, Westfield, NJ 07090. (D,R)

76. *Transauction, LLC v. eBay, Inc.*, Case No. 3:09-cv-3705-SJ (N.D. Cal.). Served as an expert for defendant in a case alleging infringement of U.S. Patent 7,343,339, relating to guarantees in online auctions. Case settled after expert reports were submitted. Firm: Irell & Manella LLP, 1800 Avenue of the Stars, Suite 900, Los Angeles, CA 90067. Contact: Peter E. Gratzinger, Esq., Munger, Tolles & Olson LLP, 355 South Grand Avenue, Los Angeles, CA 90071. (R)

77. *SDG Corporation v. Patrizzi & Co. Auctioneers SA et al.*, ICDR Case No. 50 117 T 00313 09 (Int'l. Centre for Dispute Resolution). Served as an expert for claimant in an arbitration alleging breach of contract to produce software for operating online auctions. Dr. Shamos testified at arbitration in October 2010. Award for SDG on all claims and denial of all of Patrizzi's counterclaims. Contact: Bruce Fox, Esq., Obermayer Rebmann Maxwell & Hippel LLP, One Mellon Center, Suite 5240, Pittsburgh, PA 15219. (D,R,T)

78. *Walker Digital, LLC v. Capital One Services, LLC et al.*, Civil Action 1:10cv212 (JFA) (E.D. Va.). Served as an expert for defendants in a case alleging infringement of U.S. Patents 5,970,478 and 6,374,230, relating to customizing and pricing credit card accounts. Defendants prevailed on summary judgment of non-infringement supported by a declaration from Dr. Shamos. Affirmed by the Federal Circuit on July 28, 2011. Contact: Charles S. Barquist, Esq., Morrison & Foerster LLP, 555 West Fifth Street, Suite 3500, Los Angeles, CA 90013. (R)

79. *Voter Verified, Inc. v. Premier Election Solutions, Inc. et al.*, Case No. 6:09-cv-1968-19KRS (M.D. Fla.). Served as an expert for defendants, manufacturers of voting equipment, in a case alleging infringement of U.S. Patents 6,769,613 and RE40,449, relating to paper trail verification of ballots. The Court denied a Daubert motion to exclude testimony by Dr. Shamos. Summary judgment of non-infringement granted July 28, 2011, affirmed by the Federal Circuit on November 5, 2012. All claims of the '449 patent were found non-statutory by the Federal Circuit in 2018. Contact: Robert M. Evans, Jr., Esq., Stinson LLP, 7700 Forsyth Blvd. Suite 1100, St. Louis, MO 63105. (R)

80. *Elder et al. v. National Conference of Bar Examiners*, No. C 11-00199 SI (N.D. Cal.). Served as an expert for disabled plaintiffs in a case seeking an injunction to permit them to take the bar examination in electronic format. Preliminary injunction granted Feb. 16, 2011. Plaintiff took the bar exam, passed and was awarded $224,000 in attorney's fees. Contact: Daniel F.

Goldstein, Esq., Brown, Goldstein & Levy, LLP, 120 E. Baltimore St., Suite 1700, Baltimore, MD 21202. (R)

81. *Ameranth, Inc. v. Menusoft Systems Corp., et al.*, Civil Action 2-07-CV-271 TJW/CE (E.D. Tex.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 6,384,850, 6,871,325 and 6,982,733, relating to synchronous updating of restaurant menus on wireless devices. After trial, the jury found the patents not infringed. Case settled while an appeal to the Federal Circuit was pending. Contact: John W. Osborne, Esq., Osborne Law LLC, 33 Habitat Lane, Cortlandt Manor, NY 10567. (D,R,T)

82. *BuyFigure.com, Inc. v. Autotrader.com et al.*, Case No. 06391 (Ct. of Common Pleas of Philadelphia County, PA, 2010). Served as an expert for defendants in a case alleging misappropriation of trade secrets concerning a method of selling automobiles over the Internet. Summary judgment was granted in Defendants' favor in August 2012. Contact: Howard D. Scher, Esq., Buchanan Ingersoll & Rooney, P.C., Two Liberty Place, 50 S. 16th Street, Philadelphia, PA 19102. (R)

83. *Soverain Software LLC v. J.C. Penney Corp., Inc. et al.*, C.A. No. 6:09-CV-274 (E.D. Tex.). Served as an expert for plaintiff on validity issues in a case alleging infringement of U.S. Patents 5,715,314, 5,909,492, and 7,272,639, relating to methods of conducting electronic commerce. The '639 patent was dropped before trial and all defendants settled except Avon Products and Victoria's Secret. After trial, the jury found all claims valid and infringed, and awarded damages of $9.2 million against Victoria's Secret and $8.7 million against Avon. Contact: Robert B. Wilson, Esq., Quinn Emanuel Urquhart & Sullivan, LLP, 51 Madison Avenue, 22nd Floor, New York, NY 10010. (D,R,T)

84. *AOL, LLC, et al. v. Yahoo! Inc. et al.*, No. 09 Civ. 3774 (WHP) (S.D.N.Y). Served as an expert for declaratory judgment plaintiff AOL in a case alleging infringement of U.S. Patents 6,078,866, 6,269,361, 6,546,386, 6,907,566, 7,043,483, 7,107,264, 7,373,599, and 7,702,541, relating to online advertising placement and targeted e-commerce. Case settled in Feb. 2011. Original firm: Orrick, Herrington & Sutliffe LLP. Contact: William B. Tabler II, Esq., Flextronics, 6201 America Center Drive, San Jose, CA 95002.

85. *Accenture Global Services GmbH et al. v. Guidewire Software, Inc.*, Civ. No. 09-848-SLR (D. Del.). Served as an expert for Accenture in a case alleging infringement of U.S. Patent 7,617,240, relating to automated insurance claim handling. Case settled in Oct. 2011. Original firm: Morrison & Foerster, LLP. Contact: L. Scott Oliver, Esq., K&L Gates LLP, 630 Hansen Way, Palo Alto, CA 94304. (D,R)

86. *Amdocs (Israel) Limited v. Openet Telecom, Inc. et al.*, Case 1:10-cv-00910-LMB-TRJ (D. Del.). Served as an expert for Defendant Openet in a case alleging infringement of U.S. Patents 6,836,797 and 7,631,065, relating to aggregated billing for network services. Summary judgment of non-infringement granted in favor of Defendants in Sept. 2012. The Court's opinion cites Dr. Shamos' testimony. Judgment reversed on appeal in 2014, but on remand, all claims were invalidated as claiming non-statutory subject matter. After a second appeal, the

§101 ruling was reversed. Case settled during trial in 2018. Contact: Kevin Anderson, Esq., Duane Morris LLP, 505 9th Street, N.W., Suite 1000, Washington, DC 20004-2166 (D,R)

87. *Cross-Atlantic Capital Partners, Inc. v. Facebook, Inc. et al.*, Case 07-CV-2768 JP (E.D. Pa.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patent 6,519,629, relating to establishment of online communities. Asserted claims were cancelled upon reexamination. Case has been dismissed. Original firm: McShea/Tecce PC. Contact: Frederick Tecce, Esq., Panitch Schwarze Belisario & Nadel LLP, One Commerce Square, 2005 Market Street, Suite 2200, Philadelphia, PA 19103. (R)

88. *Chavez et al. v. Bennett et al.*, CV 2006-007000 (Ariz. Super., Maricopa Cty.). Served as an expert for defendant Secretary of State of Arizona and county defendants in a case alleging that the electronic voting systems used in Arizona violated the rights of voters. Case was voluntarily dismissed by plaintiffs in May 2011. Contact: Laurence G. Tinsley, Jr., Esq, Senior General Counsel, Maricopa County Office of General Litigation Services, 301 W. Jefferson St., Phoenix, AZ 85003.

89. *Bonnette v. District of Columbia Court of Appeals and National Conference of Bar Examiners*, No. 11-cv-01053-CKK (D. D.C.). Served as an expert for a disabled plaintiff in a case seeking a preliminary injunction permitting her to take the bar examination in electronic format. Injunction granted. Case subsequently settled with Plaintiff receiving $141,000 in attorneys' fees and costs. Contact: Daniel F. Goldstein, Esq., Brown, Goldstein & Levy, LLP, 120 E. Baltimore St., Suite 1700, Baltimore, MD 21202.

90. *Jones v. National Conference of Bar Examiners et al.*, No. 5:11-cv-00174-cr (D. Vermont). Served as an expert for a disabled plaintiff in a case seeking an injunction permitting to take the bar examination using assistive technology. The preliminary injunction was granted. Plaintiff was awarded $275,000 in attorneys' fees and costs. Contact: Daniel F. Goldstein, Esq., Brown, Goldstein & Levy, LLP, 120 E. Baltimore St., Suite 1700, Baltimore, MD 21202. (R)

91. *AlmondNet, Inc. v. Microsoft Corporation*, Case 10-CV-298 (W.D. Wisc.). Served as an expert for plaintiff and counterclaim defendant AlmondNet in a case alleging infringement of U.S. Patents 6,973,436, 7,072,853, 7,454,364 and 7,822,637 by Microsoft, relating to bidding for Internet ad placement, and infringement of U.S. Patent 6,632,248 by AlmondNet, relating to customization of network documents via a unique user identifier. Microsoft obtained summary judgment of non-infringement. Contact: Meredith Zinanni, Esq., Kirkland & Ellis LLP, 300 N. LaSalle, Chicago, IL 60604.

92. *Kelora Systems, LLC. v. Target Corporation et al.*, Case 10-CV-683 (W.D. Wisc.). Served as an expert for defendant Mason Companies, Inc. in a case alleging infringement of U.S. Patent 6,275,821, relating to guided parametric searching in online catalogs. Case settled as to this defendant in July 2011. The Court granted summary judgment of invalidity and non-infringement as to the other defendants, affirmed by the Federal Circuit. Contact: Shane A. Brunner, Esq., Merchant & Gould, 10 East Doty St., Suite 600, Madison, WI 53703.

93. *TNS Media Research, LLC et al. v. TRA Global, Inc.*, Case 1:2011-CV-4039 (SAS) (S.D. N.Y.). Served as an expert for declaratory judgment plaintiffs in case alleging infringement of U.S. Patent 7,729,940, relating to anonymous matching of program viewing data from television set-top boxes with purchase data from other sources. Patentee's motion for preliminary injunction was denied on Sept. 23, 2011. Plaintiffs' motion for summary judgment of non-infringement was granted on October 3, 2013. Reversed and remanded by the Federal Circuit. Contact: Michael Albert, Esq., Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210. (R)

94. *Accenture Global Services GmbH et al. v. Guidewire Software, Inc.*, Case 3:11-03563-JSW (N.D. Cal.); *Guidewire Software, Inc. v. Accenture PLC et al.*, Case 4:11-cv-04686-LB (N.D. Cal.). Served as an expert for Accenture in related cases alleging infringement by Guidewire of U.S. Patents 6,574,636, 7,409,355 and 7,979,382, relating to systems for insurance claim handling and alleging infringement by Accenture of U.S. Patents 5,630,069, 5,734,837, 6,058,413 and 6,073,109, relating to workflow management systems. Cases settled in Oct. 2011. Contact: Colleen Garlington, Esq., Kirkland & Ellis LLP, 300 N. LaSalle St., Chicago, IL 60604.

95. *XPRT Ventures, LLC v. eBay, Inc. et al.*, C.A. 1:2010-cv-595 (SLR) (D. Del.). Served as an expert for Defendants eBay and PayPal in a case alleging infringement of U.S. Patents 7,483,856, 7,512,563, 7,567,937, 7,599,881, 7,610,244, 7,627,528, relating to methods of paying for items purchased through electronic auctions. Case has settled. Contact: Adrian Percer, Esq., Weil, Gotshal & Manges, LLP, 201 Redwood Shores Parkway, Redwood Shores, CA 94065. (D,R)

96. *Rich Media Club, LLC et al. v. Nikolai Mentchoukov et al.*, Civil No. 2:11-cv-01202-SA (D. Utah). Served as an expert for Plaintiffs in a case alleging breach of an employment contract, unfair competition concerning systems for placing advertisements on web pages and infringement of U.S. Patent 7,313,590, relating to communication between client and server computers without requiring a browser. Contact: Jared Richards, Esq., Bennett Tueller Johnson & Deere, LLC, 3165 East Millrock Drive, Suite 500, Salt Lake City, Utah 84121. (R)

97. *Franklin Inventions LLC v. Election Systems & Software, Inc.*, Case No: 2:09-cv-377 (E.D. Tex.). Served as an expert for Defendants in a case alleging infringement of U.S. Patents 6,986,999, 7,243,846 and 7,575,164, relating to voter-verifiable voting systems. Case settled after a declaration concerning invalidity was submitted by Dr. Shamos. Contact: Robert M. Evans, Jr., Esq., Lewis Rice LLC, 600 Washington Avenue, Suite 2500, St. Louis, MO 63101. (R)

98. *Illinois Computer Research, LLC v. HarperCollins Publishers, LLC, et al.*, Case No.: 10-cv-9124 (S.D.N.Y). Served as an expert for Defendants in a case alleging infringement of U.S. Patent 7,111,252, relating to limiting access to electronic books. Case settled after Markman. Contact: Brian S. Rosenbloom. Esq., Rothwell, Figg, Ernst & Manbeck, P.C., 607 14th Street, N.W., Suite 800, Washington, DC 20005. (R)

99. *Realtime Data, LLC d/b/a IXO v. Morgan Stanley et al.*, Case No.: 11 Civ. 6696 (RJH), *Realtime Data, LLC d/b/a IXO v. CME Group Inc. et al.*, Case No.: 11 Civ. 6701 (RJH), *Realtime Data, LLC d/b/a IXO v. Thompson Reuters, et al.*, Case No.: 1:2011-cv-06704 (RJH) (S.D.N.Y). Served as an expert for Plaintiff in three consolidated cases alleging infringement of U.S. Patents 7,417,568, 7,714,747, and 7,777,651, relating to compression and decompression of financial data streams. Summary judgment granted for defendants, upheld by the Federal Circuit. Contact: Dirk D. Thomas. Esq., McKool Smith, 1999 K Street, N.W., Suite 600, Washington, DC 20006. (D,R,T)

100. *Mulhern Belting, Inc. v. Tele-Data Solutions, Inc.*, Civil Action L-2258-10 (Sup. Ct. Bergen Cty. NJ). Served as an expert for defendant Vertical Communications, Inc. in a case alleging breach of contract and fraud in connection with the installation of an integrated voice-over-IP (VoIP) telecommunications system. Case has settled. Contact: John J. Abromitis, Esq., Courter, Kobert & Cohen P.C., 1001 Route 517, Hackettstown, NJ 07840. (R)

101. *Decision Support, LLC v. Election Systems & Software, Inc.*, Case No: 3:10cv90 (W.D. N.C.). Served as an expert for Defendants in a case alleging infringement of U.S. Patent 7,497,377, relating to electronic voter registration and pollbook systems. Case has settled. Contact: Robert M. Evans, Jr., Esq., Lewis Rice LLC, 600 Washington Avenue, Suite 2500, St. Louis, MO 63101. (R)

102. *Rovi Corporation et al. v. Amazon.com, Inc. et al.*, Case No. 11-cv-00003-RGA (D. Del.). Served as an expert for Plaintiffs in a case alleging infringement of U.S. Patents 5,988,078, 6,275,268, 6,769,128, 7,493,643 and 7,603,690, relating to customized on-screen television guides. The parties stipulated to entry of judgment of noninfringement. Contact: Ragesh L. Tangri, Esq., Durie Tangri LLP, 217 Leidesdorff Street, San Francisco, CA 94111.

103. *Certain Products Containing Interactive Program Guide and Parental Control Technology*, USITC Inv. No. 337-TA-820. Served as an expert for Complainants Rovi Corporation et al. and against Vizio, Inc. et al. in an International Trade Commission proceeding involving alleged infringement of U.S. Patents 6,701,523, 7,047,547, 7,493,643 and RE41,993, relating to v-chips and electronic TV program guides. Case has settled. Contact: Hong S. Lin, Esq., Paul Hastings LLP, 1117 S. California Avenue, Palo Alto, CA 94304. (R)

104. *Rovi Corporation et al. v. Roku, Inc.*, Case No. 12-cv-2185 EJD (N.D. Cal.). Served as an expert for Plaintiffs in a case alleging infringement of U.S. Patent 6,898,762, relating to a client/server electronic television program guide. Voluntarily dismissed by plaintiff without prejudice. Contact: Hong S. Lin, Esq., Paul Hastings LLP, 1117 S. California Avenue, Palo Alto, CA 94304.

105. *Rovi Corporation et al. v. LG Electronics, Inc. et al.*, Case No. 12-cv-00545-SLR (D. Del.). Served as an expert for Plaintiffs in a case alleging infringement of U.S. Patents 6,898,762, 7,065,709, 7,225,455, 7,493,643 and 8,112,776, relating to electronic television program guides. Case has settled. Contact: Hong S. Lin, Esq., Paul Hastings LLP, 1117 S. California Avenue, Palo Alto, CA 94304.

106. *Rovi Corporation et al. v. Vizio, Inc.*, Case No. 12-cv-00546-SLR (D. Del.). Served as an expert for Plaintiffs in a case alleging infringement of U.S. Patents 6,898,762, 7,065,709, 7,103,996 and 8,112,776, relating to electronic television program guides. Case has settled. Contact: Hong S. Lin, Esq., Paul Hastings LLP, 1117 S. California Avenue, Palo Alto, CA 94304.

107. *Rovi Corporation et al. v. Mitsubishi Electric Corp. et al.*, Case No. 12-cv-00547-SLR (D. Del.). Served as an expert for Plaintiffs in a case alleging infringement of U.S. Patents 6,701,523, 7,225,455 and 7,493,643, relating to electronic television program guides. Case has settled. Contact: Hong S. Lin, Esq., Paul Hastings LLP, 1117 S. California Avenue, Palo Alto, CA 94304.

108. *Netflix, Inc. v. Rovi Corporation et al.*, Case No. 11-cv-06591-PJH (N.D. Cal.). Served as an expert for Defendants in a declaratory judgment case seeking a declaration of non-infringement of U.S. Patents 6,305,016, 6,898,762, 7,100,185, 7,103,906 and 7,945,929, relating to electronic television program guides. Summary judgment was granted declaring all asserted claims invalid under 35 U.S.C. §101, affirmed by the Federal Circuit. Contact: Hong S. Lin, Esq., Paul Hastings LLP, 1117 S. California Avenue, Palo Alto, CA 94304. (R)

109. *Certain Products Containing Interactive Program Guide and Parental Control Technology*, USITC Inv. No. 337-TA-845. Served as an expert for Complainants Rovi Corporation et al. and against Netflix, Inc. et al. in an International Trade Commission proceeding involving alleged infringement of U.S. Patents 6,701,523, 6,898,762, 7,065,709, 7,103,906, 7,225,455, 7,493,643 and 8,112,776, relating to v-chips and electronic TV program guides. On Initial Determination, all claims Dr. Shamos testified about were found valid. The import requirement was found not satisfied and no infringement was found. Contact: Hong S. Lin, Esq., Paul Hastings LLP, 1117 S. California Avenue, Palo Alto, CA 94304. (D,R,T)

110. *Yardi Systems, Inc. v. Realpage, Inc. et al.*, Case No. 2:11-cv-0090-ODW-JEM (C.D. Cal.). Served as an expert for Defendants in an action alleging misappropriation of trade secrets, unfair competition, violation of the Computer Fraud and Abuse Act, the Comprehensive Computer Data Access and Fraud Act (Cal. Penal Code §502) and the Digital Millennium Copyright Act, arising out of provision of cloud-based property management systems. Case has settled. Contact: Susan van Keulen, Esq., O'Melveny & Myers LLP, 2765 Sand Hill Road, Menlo Park, CA 94025.

111. *Long Range Systems, LLC v. HME Wireless, Inc.*, Civil Action 3:12-cv-03659-P (N.D. Tex.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patent 6,712,278, relating to a wireless system for locating a customer's table in a restaurant. Case was dismissed by plaintiff. Contact: David Cabello, Esq., Wong, Cabello, Lutsch, Rutherford & Brucculeri, LLP, 20333 SH 249, Suite 600, Houston, Texas 77070. (R)

112. *EdiSync Systems, LLC v. Centra Software, Inc. et al.*, Civil Action 03-cv-01587-WYD-MEH (D. Colo.). Served as an expert for Defendant Saba Software Inc. in a case alleging infringement of U.S. Patent 5,799,320, relating to multi-author document editing systems. Case has

settled. Contact: Robert M. Abrahamsen, Esq., Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210. (D,R)

113. *TecSec, Inc. v. IBM et al.*, Case No. 1:10-cv-115-LMB/TCB (E.D. Va.). Served as an expert for Defendant SAS Institute, Inc. in a case alleging infringement of U.S. Patents 5,369,702, 5,680,452, 5,717,755 and 5,898,781, relating to the Distributed Cryptographic Object Method, allowing embedding of encrypted objects within other objects. The Court entered judgment of non-infringement after Markman. Affirmed by the Federal Circuit at 2011-1303. Contact: Thomas R. Goots, Esq., Jones Day, North Point, 901 Lakeside Avenue, Cleveland, Ohio 44114-1190.

114. *Integrated Technological Systems, Inc. v. Green Dot Corporation*, Civ. Action No. 2:11-cv-01626-GMN-(GWF) (D. Nev.). Served as an expert for Defendant in a case alleging infringement of U.S. Patent 7,912,786, relating to an electronic payment system for transferring money between debit card accounts. Case has settled. Contact: Benjamin J. Sodey, Esq., Bryan Cave LLP, One Metropolitan Square (211 North Broadway), Suite 3600, St. Louis, MO 63102-2750.

115. *Hausen et al. v. PS Illinois Trust*, Case No. 11-cv-06888 (N.D. Ill.). Served as an expert for Plaintiff in a case concerning the reasonableness of credit card and email notification practices employed by a public storage facility prior to selling customers' stored goods. Case has settled. Contact: Jeffrey S. Becker, Esq., Swanson, Martin & Bell, LLP, 330 N. Wabash, Suite 3300, Chicago, IL 60611. (D,R)

116. *Linksmart Wireless Technology, LLC v. T-Mobile, USA, Inc. et al.*, Case 2:08-cv-264-DF-CE (E.D. Texas). Served as an expert for Defendant Choice Hotels International, Inc. in a case alleging infringement of U.S. Patent 6,779,118, relating to rule-based redirection of Internet service requests based on a user ID. Case has settled. Contact: Gregory R. Lyons, Esq., Wiley Rein LLP, 1776 K Street NW, Washington DC 20006.

117. *SAP America, Inc. v. Purple Leaf, LLC et al.*, Case No. 4:11-cv-04601-PJH (N.D. Cal.). Served as an expert for declaratory judgment plaintiff SAP in a case alleging infringement of U.S. Patents 7,603,311 and 8,027,913, relating to methods for conducting payment transactions over the Internet. Case has settled. Original firm: Simpson Thatcher & Bartlett LLP. Contact: Brian McCloskey, Esq., Greenberg Traurig, LLP, MetLife Building, 200 Park Ave., New York, NY 10166.

118. *Ameranth, Inc. v. PAR Technology Corp., et al.*, Civil Action 2-10-CV-294 JRG-RSP (E.D. Tex.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 6,384,850 and 6,871,325, relating to synchronous updating of hospitality applications and data on wireless devices. Case settled after expert reports were served. Contact: John W. Osborne, Esq., Osborne Law LLC, 33 Habitat Lane, Cortlandt Manor, NY 10567. (R)

119. *Digital-Vending Services International, LLC, v. The University of Phoenix, Inc. et al.*, Civil Action 2:09-cv-555-AWA-TEM (E.D. Va.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 6,170,014, 6,282,573 and 6,606,664, relating to content delivery

methods particularly applicable to online courseware. Summary judgment of non-infringement granted October 4, 2013. Contact: Andrew G. DiNovo, Esq., DiNovo Price Ellwanger & Hardy LLP, 7000 N. MoPac Expressway, Suite 350, Austin, TX 78731. (D,R)

120. *Analytical Mechanics Associates, Inc. v. Rhythm Engineering, LLC et al.*, Case No. 4:12-cv-00008 (E.D. Va.). Served as an expert for defendants in a case alleging breach of a contract relating to development of an image processing system to detect vehicles at intersections and control traffic signals. Case was resolved by binding arbitration. Contact: John K. Power, Esq., Husch Blackwell LLP, 4801 Main Street, Suite 1000, Kansas City, MO 64112. (D,R,T)

121. *Protegrity Corporation v. Voltage Security, Inc.*, Case No. 3:10-CV-755 (RNC) (D. Conn.). Served as an expert for defendant in a case alleging infringement of U.S. Patents 6,321,201, 6,963,980 and 7,325,129, relating to methods of encrypting databases. Case settled during trial. Contact: Edward G. Poplawski, Esq., Wilson Sonsini Goodrich & Rosati Professional Corporation, 650 Page Mill Road, Palo Alto, CA 94304-1050. (D,R,T)

122. *Progressive Casualty Insurance Company v. Allstate Insurance Company et al.*, Case No. 1:11-cv-00082-BYP (N.D.Ohio). Served as an expert for defendant Allstate in a case alleging infringement of U.S. Patent 6,064,970, relating to determining the cost of automobile insurance by monitoring the location and activity of a vehicle, and U.S. Patent 7,124,088, relating to online modification and quoting of insurance policies. Case has settled as to Allstate. Contact: James Medek, Esq., Kirkland & Ellis LLP, 300 North LaSalle Chicago, IL 60654.

123. *Symantec Corporation v. Acronis, Inc. et al.*, Case No. 3:11-cv-05310 EMC (N.D. Cal.). Served as an expert for plaintiff and infringement counterclaim defendant Symantec in a case alleging infringement of U.S. Patents 6,615,365, 7,047,380, 7,246,211 and 7,266,655, relating to online disk backup, imaging and recovery systems, U.S. Patent 7,093,086, relating to backup of virtual machines, U.S. Patent 7,322,010, relating to graphic views of computer configurations and U.S. Patent 7,565,517, relating to retargeting hardware configuration images to new hardware. Case has settled. Contact: Jennifer Kash, Esq., Quinn Emanuel Urquhart & Sullivan LLP, 50 California Street, 22nd Floor, San Francisco, California 94111. (D,R)

124. *Secure Axcess, LLC v. Bank of America Corp. et al.*, Civil Action No. 6:10-cv-670-LED (E.D. Tex.). Served as an expert for defendants Zions First National Bank and Amegy Bank N.A. in a case alleging infringement of U.S. Patent 7,631,191, relating to authenticating web pages. Case has settled as to those defendants. Contact: Brian Pandya, Esq., Wiley Rein LLP, 1776 K Street NW, Washington DC 20006.

125. *The MoneySuite Company v. Insurance Answer Center, LLC et al.*, Case No. SACV 11-1847-AG (C.D. Cal.). Served as an expert for defendants, including The Allstate Corporation, in a case alleging infringement of U.S. Patent 6,684,189, relating to online quoting of insurance policy rates. Case has settled. Contact: Garret A. Leach, Esq., Kirkland & Ellis LLP, 300 N. LaSalle, Chicago. IL 60654. (D,R)

126. *e-LYNXX Corporation v. Innerworkings, Inc. et al.*, CA 1:10-cv-02535-CCC (M.D. Pa.). Served as an expert for defendants, including R.R. Donnelley & Sons Company, in a case

alleging infringement of U.S. Patents 7,451,106 and 7,788,143, relating to electronic procurement of customized goods and services. The Court granted summary judgment of non-infringement in July 2013. Contact: James R. Nuttall, Esq., Steptoe & Johnson, LLP, 115 South LaSalle Street, Suite 3100, Chicago, IL 60603. (R)

127. *Vasudevan Software, Inc. v. Microstrategy, Inc.*, Case No. 3:11-cv-06637-RS-PSG (N.D. Cal.). Served as an expert for defendant in a case alleging infringement of U.S. Patents 6,877,006, 7,167,864, 7,720,861 and 8,082,268, relating to methods of online analytical processing (OLAP). The patents were found invalid on summary judgment. On appeal, the Federal Circuit upheld the Court's claim constructions and judgment of non-infringement. Declaratory judgment counterclaims voluntarily dismissed. Contact: Kevin A. Smith, Esq., Quinn Emanuel Urquhart & Sullivan, LLP, 50 California Street, San Francisco, CA 94111. (R)

128. *Digonex Technologies, Inc. v. Qcue, Inc.*, Case No. 1:12-cv-00801-SS (W.D. Texas). Served as an expert for plaintiff in a case alleging infringement of U.S Patents 8,095,424 and 8,112,303, relating to computerized methods for dynamic pricing. In a Markman order, the Court found the claims indefinite. Contact: David D. Schumann, Fenwick & West LLP, 555 California Street, 12th Floor, San Francisco, CA 94104. (D,R,T)

129. *Peter Mayer Publishers, Inc. v. Daria Shilovskaya et al.*, Case No. 12-CV-8867-PG (S.D. N.Y.). Served as an expert for declaratory judgment defendants in a case of first impression to determine whether a reliance party under 17 U.S.C. §104A(d)(3)(B) may issue an ebook version of a work to which copyright has been restored. The Court ruled that ebooks are not transformative and hence not derivative works. Contact: Timothy O'Donnell, Esq., 40 Exchange Place, 19th Fl., New York, NY 10005. (R)

130. *SIPCO, LLC v. Control4 Corporation et al.*, CA 1:11-cv-00612-JEC (N.D. Georgia). Served as an expert for defendants Schneider Electric Buildings Americas, Inc. and Schneider Electric USA, Inc. in a case alleging infringement of U.S. Patents 7,103,511, 7,468,661 and 7,697,492, relating to systems for monitoring remote sensors and controlling remote devices. Case has settled. Contact: Benjamin Bradford, Esq., Jenner & Block LLP, 353 N. Clark St., Chicago, IL 60654-3456.

131. *Unified Messaging Solutions LLC v. Google, Inc. et al.*, Case 1:12-cv-06286 (N.D. Ill.). Served as an expert for defendant eBay, Inc. in a case alleging infringement of U.S. Patents 6,857,074, 7,836,141, 7,895,306, 7,895,313, and 7,934,148, relating to message storage and delivery systems. Case has settled as to defendant eBay, Inc. Contact: Yar R. Chaikovsky, Esq., McDermott Will & Emery LLP, 275 Middlefield Road, Suite 100, Menlo Park, CA 94025.

132. *Credit Card Fraud Control Corporation v. PayPal, Inc.*, Case No. 9:12-CV-81143 (S.D. Fla.). Served as an expert for defendant PayPal in a case alleging infringement of U.S. Patent 8,229,844, relating to reduction of fraud in online transactions. Plaintiff dismissed the case with prejudice based on prior art located by PayPal. Contact: Adrian Percer, Esq., Weil, Gotshal & Manges, LLP, 201 Redwood Shores Parkway, Redwood Shores, CA 94065.

133. *Comscore, Inc. v. Integral Ad Science, Inc.*, Civil Action 2:12-cv-00351-HCM-DEM (E.D. Va.). Served as an expert for defendant Integral in a case alleging infringement of U.S. Patents 6,108,637, 6,115,680, 6,327,619, 6,418,470, 7,386,473, 7,613,635, 7,716,326 and 7,756,974, relating to determining whether a portion of a displayed page is visible to a user. Case has settled as to defendant Integral. Contact: Robert M. Abrahamsen, Esq., Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210.

134. *Ariba, Inc. v. Coupa Software, Inc.*, Case No. 3:12-cv-01484 JST (N.D. Cal.). Served as an expert for plaintiff Ariba in a case alleging infringement of U.S. Patent 7,117,165, relating to electronic methods for approving requisitions and generating purchase orders. Case has settled. Contact: Amy Van Zant, Esq., Covington & Burling LLP, 333 Twin Dolphin Drive, Redwood Shores, CA 94605-1418. (D,R)

135. *Lowe v. National Board for Respiratory Care, Inc. et al.*, Docket 1:12-cv-00345-DBH (D. Maine). Served as an expert for disabled plaintiff in a case seeking an injunction permitting to take a professional qualification examination using assistive computer technology. Case settled shortly after Dr. Shamos's declaration in support of preliminary injunction was filed. Contact: Kristin Aiello, Esq., Managing Attorney, Disability Rights Center, 24 Stone St., Augusta, ME 04338. (R)

136. *Checkfree Corporation et al. v. Metavante Corporation et al.*, Case No. 3:12-cv-15-J-34JBT (M.D. Fla.) Served as an expert for defendant Metavante in a case alleging infringement of U.S. Patents 7,383,223, 7,792,749, 7,853,524 and 7,966,311, relating to transferring funds in electronic payment networks. Defendants have counterclaimed, alleging infringement of U.S. Patents. 7,370,014, 7,734,543 and 7,958,049, relating to electronic invoice presentment. All claims of all four patents asserted by Plaintiff have been found invalid by the Patent Office. Case was stayed pending appeal, followed by voluntary dismissal by Plaintiff. Contact: Jeffrey A. Berkowitz, Esq., Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., Two Freedom Square, 11955 Freedom Drive, Reston, VA 20190-5675. (D,R)

137. *PPS Data, LLC v. Passport Health Communications, Inc.*, Case No. 2:12-cv-00438-DN (C.D. Utah). Served as an expert for defendant Passport in a case alleging infringement of U.S. Patents 6,341,265 and 7,194,416, relating to preparing and correcting health insurance claim forms. Case settled shortly after Dr. Shamos's claim construction report was served. Contact: Edward J. Pardon, Esq., Merchant & Gould, 10 East Doty Street, Suite 600, Madison, WI 53703. (R)

138. *Lodsys, LLC v. Combay, Inc. et al.*, Civil Action 2:11-cv-272 (E.D. Texas). Served as an expert for defendant Symantec Corporation in a case alleging infringement of U.S. Patents 7,222,078 and 7,620,565, relating to gathering feedback from products through a user interface. Case settled two weeks after Dr. Shamos's deposition. Contact: David D. Schumann, Fenwick & West LLP, 555 California Street, 12th Floor, San Francisco, CA 94104. (D,R)

139. *Long Range Systems, LLC v. HME Wireless, Inc.*, Civil Action 3:12-cv-04162M (N.D. Tex.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 6,542,751 and 7,062,281, relating to methods of paging customers at a restaurant. Case was dismissed by

plaintiff after a tentative Markman ruling. Contact: David Cabello, Esq., Wong, Cabello, Lutsch, Rutherford & Brucculeri, LLP, 20333 SH 249, Suite 600, Houston, Texas 77070. (R)

140. *Symantec Corporation v. Veeam Software Corporation*, Case No. 3:12-cv-0700-SI (N.D. Cal.). Served as an expert for plaintiff Symantec in a case alleging infringement of U.S. Patents 6,931,558, relating to methods for restoring network devices after failure, 7,024,527, relating to methods of backing up disk while applications are active, 7,093,086, relating to methods for backing up virtual machines, 7,254,682, relating to snapshot disk backup, 7,480,822, relating to restoring running states of computing systems, 7,831,861, relating to restoring application data and 8,117,168, relating to virtual disk backups. Case is stayed pending PTAB review. All asserted claims have been found unpatentable. On appeal to the Federal Circuit, the PTAB's claim construction and obviousness determinations were upheld, case remanded to allow amendment of claims. Case subsequently settled. Contact: Jennifer Kash, Esq., Quinn Emanuel Urquhart & Sullivan LLP, 50 California Street, 22nd Floor, San Francisco, California 94111. (R)

141. *EMG Technology, LLC v. Green Mountain Coffee Roasters and Keurig, Inc.*, Case No. 6:13-cv-144 (E.D. Texas) (Lead case: 6:13-cv-134). Served as an expert for Defendants in a case alleging infringement of U.S. Patent 7,441,196, relating to a method of navigating a Web page linked to a sister web site. Case has settled. Contact: Michael A. Albert, Esq., Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210.

142. *eDirect Publishing, Inc. v. Live Career, Ltd., et al.*, Case No. 12-CV-1123-JAH-JMA (S.D. Cal.). Served as an expert for plaintiff eDirect in a case alleging infringement of U.S. Patents 6.363,376 and 6,757,674, relating to automatic submission of information to career websites. Case has settled. Contact: Ryan Baker, Esq., Baker Marquart LLP, 10990 Wilshire Blvd., Los Angeles, CA 90024. (D,R)

143. *Motivation Innovations, LLC v. Ulta Salon Cosmetics and Fragrance, Inc. et al.*, C.A. No. 11-615-SLR-MPT (D. Del.). Served as an expert for defendant Ulta in a case alleging infringement of U.S. Patent 5,612,527, relating to a system for redeeming discount offers at point of sale. The Court granted summary judgment of noninfringement. Contact: Julie Heaney, Esq., Morris, Nichols, Arsht & Tunnell, LLP, 1201 North Market Street, Wilmington, DE 19899-1347. (D,R)

144. *Computer Software Protection, LLC v. Autodesk, Inc.*, C.A. No. 12-452-SLR (D. Del.). Served as an expert for Defendant Autodesk in a case alleging infringement of U.S. Patent 6,460,140, relating to unlocking the use of software remotely using validation number, a registration key and a license key. Case has settled. Contact: Cheryl T. Burgess, Esq., Knobbe, Martens, Olson & Bear, L.L.P., 2040 Main Street, 14th Floor Irvine, CA 92614. (R)

145. *Voltage Security, Inc.* v. *Protegrity Corporation*, CBM2014-0024, Patent Trial and Appeal Board. Served as an expert for petitioner in a covered business method petition seeking review of U.S. Patent 8,402,281, relating to methods of encrypting databases. Matter has settled. Contact: Matthew Argenti, Esq., Wilson Sonsini Goodrich & Rosati Professional Corporation, 650 Page Mill Road, Palo Alto, CA 94304-1050. (R)

146. *United Video Properties, Inc. et al. v. Haier Group Corp. et al.*, C.A. No. 11-1140-KAJ (D.Del.). Served as an expert for Plaintiffs in a case alleging infringement of U.S. Patents 6,701,523 and 7,047,547, relating to television parental control technology. Case has settled. Contact: Hong S. Lin, Esq., Paul Hastings LLP, 1117 S. California Avenue, Palo Alto, CA 94304. (D,R)

147. *Droplets, Inc. v. E*TRADE Financial Corporation et al.*, Case No.: 1:12-CV-02326-CM (S.D.N.Y.). Served as an expert for defendants in an action alleging infringement of U.S. Patents 6,687,745 and 7,502,838, and 8,402,115, relating to delivering interactive links for presenting applications on a client computer. Defendants prevailed on a summary judgment of non-infringement on the '745 Patent. All claims of the '115 and '838 Patents were found invalid after IPRs, affirmed by the Federal Circuit in 2016-2504 and 2016-2602. Contact: Michael Levin, Esq., Wilson Sonsini Goodrich & Rosati Professional Corporation, 650 Page Mill Road, Palo Alto, CA 94304-1050. (D,R,T)

148. *Symantec Corporation v. Acronis, Inc. et al.*, Case No. 3:11-cv-05331 JST (N.D. Cal.). Served as an expert for plaintiff and infringement counterclaim defendant Symantec in a case alleging infringement by Symantec of U.S. Patents 7,366,859 and 7,831,789, relating to incremental disk backup, and infringement by Acronis of U.S. Patent 7,024,527, and 7,996,708, relating to disk backup and restore, U.S. Patent 7,454,592, and U.S. Patent 7,941,459, relating to single instance disk storage, and U.S. Patent 7,680,957, relating to modifiable representations of computer configurations. Case has settled. Contact: Jennifer Kash, Esq., Quinn Emanuel Urquhart & Sullivan LLP, 50 California Street, 22nd Floor, San Francisco, California 94111. (D,R)

149. *Jazz Pharmaceuticals, Inc. v. Roxane Laboratories, Inc.*, CA 2:10-cv-06108-ES-MCA (D. N.J.). Served as an expert for defendant in a case alleging infringement of U.S. Patents 7,668,730, 7,765,106, 7,765,107, 7,797,171 and 7,895,059, relating to methods of controlling the distribution of sensitive drugs. Case has settled. Contact: Alan B. Clement, Esq., Locke Lord LLP, Brookfield Place, 200 Vesey Street, 20th Floor, New York, NY 10281-2101. (R)

150. *TuitionFund, LLC v. SunTrust Banks, Inc. et al.*, CA 3:11-cv-00069 (M.D. Tenn.). Served as an expert for defendants Cardlytics, Inc., Regions Financial Corp., and Regions Bank in a case alleging infringement of U.S. Patents 7,499,872, 7,653,572 and 7,899,704, relating to methods for awarding rebates for credit and debit card purchases. Case settled. Contact: Michael S. Connor, Esq., Alston & Bird LLP, Bank of America Plaza, 101 South Tryon Street, Suite 4000, Charlotte, NC 28280-4000. (D,R)

151. *Pollin Patent Licensing, LLC et al. v. AT&T Corporation et al.*, Case No. 1:11-cv-07855 (N.D. Ill.). Served as an expert for defendants in a case alleging infringement of U.S. Patent 7,117,171, relating to verifying financial institution identification in electronic payment systems. Case has settled. Contact: James L. Howard, Esq., Kilpatrick Townsend & Stockton LLP, 1001 West Fourth Street Winston-Salem, NC, 27101.

152. *PPS Data, LLC v. Bluepoint Solutions, Inc.*, Case 2:13-cv-01351 (D. Nev.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 7,181,430, 7,216,106,

7,440,924, 7,624,071 and 8,126,809, relating to methods for processing check images in electronic payment systems. Case has settled. Contact: Anthony H. Son, Esq., Maddox Edwards, PLLC, 1900 K Street NW, Suite 725, Washington, DC 20006. (Original firm: Wiley Rein).

153. *e-LYNXX Corporation v. Ariba, Inc.*, CA 1:12-cv-01771-CCC (M.D. Pa.). Served as an expert for defendant Ariba, in a case alleging infringement of U.S. Patents 7,451,106, 7,788,143 and 8,209,227, relating to electronic procurement of customized goods and services. Case has settled. Contact: Amy Van Zant, Esq., Covington & Burling LLP, 333 Twin Dolphin Drive, Redwood Shores, CA 94605-1418.

154. *EMG Technology, LLC v. AutoZone, Inc.*, C.A. 6:13-cv-134 (E.D. Tex.) (Lead case: 6:12-cv-543). Served as an expert for defendant AutoZone in a case alleging infringement of U.S. Patent 7,441,196, relating to transcoding web sites into mobile sites. Defendant obtained summary judgment of non-infringement. Contact: Terry L. Clark, Esq., Bass, Berry & Sims PLC, 1201 Pennsylvania Ave. N.W., Washington, D.C. 20004. (R)

155. *In re: Oil Spill by the Oil Rig "Deepwater Horizon" in the Gulf of Mexico, on April 20, 2010*, MDL No. 2179 (E.D. La.). Served as an expert for litigants BP Exploration & Production Inc. et al. on an issue relating to identification of an anonymous person through Internet searching. Contact: Mark. J. Nomellini, Esq., Kirkland & Ellis LLP, 300 N. LaSalle, Chicago, IL 60654. (R)

156. *EC Data Systems, Inc., v. J2 Global, Inc. et al.*, CV 12-07544 (C.D. Cal.). Served as an expert for declaratory judgment plaintiff EC Data Systems in a case alleging infringement of U.S. Patents 6,208,638 and 6,350,066, 6,597,688 and 7,020,132, relating to electronic distribution of faxes through email. Case has settled. Contact: Matthew Spohn, Esq. Norton Rose Fulbright LLP., Tabor Center, 1200 17th Street, Suite 1000, Denver, Colorado 80202.

157. *MoneyCat, Ltd. v. PayPal, Inc.*, CA 1:13-cv-01358-RGA (D. Del.), now 3:14-cv-02490-PSG (N.D. Cal.). Served as an expert for defendant PayPal in a case alleging infringement of U.S. Patents 7,590,602, 8,195,578 and 8,051,011, relating to issuance and transfer of electronic currency. On CBM review, the PTAB found all asserted claims of all three patents invalid, affirmed by the Federal Circuit. Case was subsequently dismissed. Contact: Adrian Percer, Esq., Weil, Gotshal & Manges, LLP, 201 Redwood Shores Parkway, Redwood Shores, CA 94065. (D,R)

158. *GSI Commerce Solutions, Inc.* v. *Clear With Computers, Inc.*, Patent Trial and Appeal Board Case CBM2013-00055. Served as an expert for petitioner, an eBay company, in a covered business method review of U.S. Patent 8,266,015, relating to methods of presenting lists of product customization options. Review was instituted but the CBM was terminated by settlement. Contact: Scott McKeown, Esq., Ropes & Gray, L.L.P., 2099 Pennsylvania Avenue, Washington, DC 20006-6807. (D,R)

159. *Fidelity National Information Services, Inc. v. Cashedge, Inc. and Checkfree Corporation*, Patent Trial and Appeal Board Cases CBM2013-00028, 30, 31 and 32. Served as

an expert for petitioner in covered business method reviews of U.S. Patents 7,383,223, 7,792,749, 7,853,524 and 7,966,311, relating to transferring funds in electronic payment networks. Reviews have been instituted. All claims of the four patents were invalidated by the PTAB in December 2014. Appeal was taken to the Federal Circuit but terminated by agreement. Contact: Jeffrey A. Berkowitz, Esq., Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., Two Freedom Square, 11955 Freedom Drive, Reston, VA 20190-5675. (D,R)

160. *Boku, Inc. v. Xilidev, Inc.*, Patent Trial and Appeal Board Cases CBM2014-00140 and CBM2014-00148. Served as an expert for petitioner in two covered business method reviews of U.S. Patent 7,273,168, relating to authorizing payments via handheld devices. Result: claims 1-18 and 20-23 found invalid. Claim 19 cancelled. Contact: Frank Pietrantonio, Esq., Cooley LLP, One Freedom Square, 11951 Freedom Drive, Reston, VA 20190. (R)

161. *Protegrity Corporation v. Phoenix Payment Systems, Inc. d/b/a Electronic Payment Exchange*, Case No. 3:13-CV-1386-VKB (D. Conn.). Served as an expert for defendant in a case alleging infringement of U.S. Patents 6,321,201 and 8,402,281, relating to methods of encrypting databases. Case has settled. Contact: David J. Wolfsohn, Esq., Duane Morris LLP, 20 South 17th Street, Philadelphia, PA 19103. (R)

162. *Ameranth, Inc. v. Genesis Gaming Solutions, Inc. et al.*, Case No. SACV 8:11-0189-AG (C.D. Cal.). Served as an expert for Ameranth in a case alleging infringement of U.S. Patents 7,431,650, 7,878,909 and 8,393,969, relating to systems for managing casino operations, particularly in poker rooms. Case has settled. Contact: John W. Osborne, Esq., Osborne Law LLC, 33 Habitat Lane, Cortlandt Manor, NY 10567. (D,R)

163. *Telebuyer, LLC v. Amazon.com, Inc.*, Case No. 2:13-cv-01677-BJR (W.D. Wash.). Served as an expert for Telebuyer in a case alleging infringement by Amazon.com of U.S. Patents 6,323,894, 7,835,508, 7,835,509, 7,839,984, 8,059,796, 8,098,272, and 8,315,364, relating to systems for interfacing buyers and sellers via communication networks. Summary judgment was entered declaring all asserted claims invalid under 35 U.S. §101. Contact: Brian Berliner, Esq., O'Melveny & Myers LLP, 400 South Hope Street, Los Angeles, CA 90071. (D,R)

164. *GlobeRanger Corporation v. Software AG, et al.*, Civil Action No. 3:11-CV-403-B (N.D. Texas). Served as an expert for GlobeRanger in a case alleging misappropriation of trade secrets and civil conspiracy involving radio-frequency identification (RFID) software and business processes. Result: jury verdict of $15 million in favor of GlobeRanger, upheld on appeal to the Fifth Circuit. Contact: Ophelia Camiña, Esq., Susman Godfrey, L.L.P., 901 Main St., Suite 5100, Dallas, TX 75202-3775. (D,R,T)

165. *In re: ProvideRx of Grapevine, LLC and CERx Pharmacy Partners, LP v. Provider Meds, LP, et al.*, Adv. Proc. No. 13-03015-BJH (Bankr. N.D. Tex). Served as an expert for creditor CERx in a Chapter 7 bankruptcy case involving security interests in software for remote dispensing pharmacies and whether certain licenses constitute encumbrances under Texas law. Case has settled. Contact: Bill Whitehill, Esq., Gardere Wynne Sewell LLP, 1601 Elm St., Dallas, TX 75201. (R)

166. *Square, Inc. v. Protegrity Corporation*, CBM2014-00182, Patent Trial and Appeal Board (2014). Served as an expert for petitioner in a covered business method petition seeking review of U.S. Patent 8,402,281, relating to methods of encrypting databases. Result: all claims invalid under §101. Contact: Matthew Argenti, Esq., Wilson Sonsini Goodrich & Rosati Professional Corporation, 650 Page Mill Road, Palo Alto, CA 94304-1050. (D,R)

167. *VigLink, Inc. v. Linkgine, Inc.*, Patent Trial and Appeal Board (2014). Served as an expert for petitioner in covered business method petitions 2014-00184 and 2014-00185 seeking review of U.S. Patents 7,818,214 and 8,027,883, relating to modifying affiliate links on webpages. Result: all challenged claims found invalid. Affirmed by the Federal Circuit at 2016-2087, 2016-2088. Contact: Robert C. Hilton, Esq., McGuireWoods LLP, 2000 McKinney Ave., Suite 1400, Dallas, TX 75201. (R)

168. *Juhline et al. v. Ben Bridge Jewelers Inc. et al.*, Case 11-cv-2096-GPC-NLS (S.D. Cal.). Served as an expert for defendant Ben Bridge in a class action alleging violation of California Civil Code §1747.8, relating to the collection of personal identification information in connection with credit card transactions. Case has settled. Contact: Rosemarie T. Ring. Esq., Munger, Tolles & Olson LLP, 560 Mission St., 27th Fl., San Francisco, CA 94105.

169. *Catch Curve, Inc. v. Integrated Global Concepts, Inc. v. j2 Global Communications, Inc. et al.*, Case 1:06-CV-02199 (N.D. Ga.). Served as an expert for defendant and counterclaim plaintiff Integrated Global Concepts in a case alleging infringement of U.S. Patents 4,994,926, 5,291,302, 5,459,584, 6,643,034, 6,785,021, 7,365,884 and 7,525,691, relating to store-and-forward fax systems. Infringement claims were dropped. The issue at bar is whether j2 Global had an objective basis to believe that Integrated Global was infringing. Case has settled. Contact: James Heiser, Esq., Chapman and Cutler, LLP, 111 West Monroe St., Chicago, IL 60603. (D,R)

170. *Phoenix Payment Systems, Inc. v. Protegrity Corporation*, CBM2014-00121, Patent Trial and Appeal Board (2014). Served as an expert for petitioner in a covered business method petition seeking review of U.S. Patent 8,402,281, relating to methods of encrypting databases. Underlying litigation settled before CBM could be instituted. Contact: Contact: David J. Wolfsohn, Esq., Duane Morris LLP, 20 South 17th Street, Philadelphia, PA 19103. (R)

171. *Informatica Corporation v. Protegrity Corporation*, CBM2015-00010, CBM2015-00021, Patent Trial and Appeal Board (2014). Served as an expert for petitioner in two covered business method petitions seeking review of U.S. Patents 8,402,281 and 6,321,201, relating to methods of encrypting databases. Result: all claims found invalid under 35 U.S.C. §101. The Board's opinions in the '201 case and the '281 case comment favorably on Dr. Shamos's testimony. Contact: Mark S. Kaufman, Esq., Reed Smith LLP, 1301 K Street N.W., Washington, DC 20005. (D,R)

172. *Qualtrics, LLC v. OpinionLab, Inc.*, IPR2014-00314, IPR2014-00356, IPR2014-00366, IPR2014-00406, IPR2014-00420, and IPR2014-00421, Patent Trial and Appeal Board (2014). Served as an expert for patent owner OpinionLab, Inc. in *inter partes* reviews of U.S. Patents 6,421,724, 6,606,581, 8,041,805, 7,085,820, 7,370,285 and 8,024,668, relating to

methods of soliciting page-specific feedback regarding web pages. All challenged claims have been found invalid except as to the '805 patent. '724 was not instituted. Contact: Chris Kennerly, Esq., Paul Hastings LLP, 1117 S. California Ave., Palo Alto, CA 94304. (D,R)

173. *Callwave Communications, LLC v. AT&T Mobility, LLC et al.*, Case 1:12-cv-01788-RGA (D. Del.). Served as an expert for defendant Research In Motion, Corp. in a case alleging infringement of U.S. Patent 7,907,933, relating to methods of billing for purchases by placing a call to a pay-per-call service. Plaintiff stipulated to non-infringement for appeal purposes, but the Federal Circuit upheld on January 10, 2017. Contact: John V. Gorman, Esq., Morgan, Lewis & Bockius LLP, 1701 Market Street, Philadelphia, PA 19103.

174. *SoftVault Systems, Inc. v. Dassault Systèmes Solidworks Corporation*, Case 5:14-cv-03221-LHK (N.D. Cal.). Served as an expert for defendant Solidworks. in a case alleging infringement of U.S. Patents 6,249,868 and 6,594,765 relating to embedded agents for protecting computer systems against theft. Case has settled. Contact: Cheryl T. Burgess, Esq., Knobbe, Martens, Olson & Bear, L.L.P., 2040 Main Street, 14th Floor Irvine, CA 92614.

175. *PPS Data, LLC v. TransCentra, Inc.*, Case 13-359-LPS (D. Del.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 7,181,430, 7,440,924, 7,624,071 and 8,126,809, relating to methods for processing check images in electronic payment systems. Case has settled. Contact: Anthony H. Son, Esq., Maddox Edwards, PLLC, 1900 K Street NW, Suite 725, Washington, DC 20006. (Original firm: Wiley Rein).

176. *Clear With Computers, Inc. v. Spanx, Inc.*, C.A. 6:12-cv-950-LED (E.D. Texas). Served as an expert for defendant, an eBay company, in a case alleging infringement of U.S. Patent 8,266,015, relating to methods of presenting lists of product customization options. Judgment on the pleadings was granted, invalidating the asserted claims under 35 U.S.C. §101. Case was appealed to the Federal Circuit, but the appeal with withdrawn. Case has settled. Contact: Scott McKeown, Esq., Oblon, Spivak, McClelland, Maier & Neustadt, L.L.P., 1940 Duke Street Underpass, Alexandria, VA 22314.

177. *Integrated Global Concepts, Inc. v. Advanced Messaging Technologies, Inc.*, IPR2014-01027 and IPR2014-01028 Patent Trial and Appeal Board (2014). Served as an expert for petitioner seeking *inter partes* review of U.S. Patents 6,020,980, relating to delivering faxes through electronic mail. The PTAB declined to institute review. Contact: Robert J. Schneider, Esq., Taft Stettinius & Hollister LLP, 111 East Wacker, Suite 2800, Chicago, IL 60601. (R)

178. *athenahealth, Inc. v. AdvancedMD Software, Inc.*, Civil Action 1:11-cv-11260-GAO (D. Mass.). Served as an expert for plaintiff athenahealth, Inc. in a case alleging infringement of U.S. Patents 7,617,116 and 7,720,701, relating to detecting errors in medical insurance claim submissions and automated configuration of medical practice management systems. Case has settled. Contact: Robert M. Abrahamsen, Esq., Wolf, Greenfield & Sacks, P.C., 600 Atlantic Avenue, Boston, MA 02210.

179. *CEATS, Inc. v. Orbitz Worldwide, Inc.*, Civil Action 2:13-cv-01385-MMD-PAL (D. Nev.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents

7,548,667, 7,640,178, 7,660,727, 8,219,448, 8,229,774 and 8,244,561, relating to systems and methods for managing airline seat reservations. Case has settled. Contact: Jared Bunker, Esq., Knobbe, Martens, Olson & Bear, L.L.P., 2040 Main Street, 14th Floor Irvine, CA 92614.

180. *Audatex North America, Inc. v. Mitchell International, Inc.*, Civil Action 3:13-cv-01523-BEN (BLM) (S.D. Cal.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 7,912,740, 8,200,513 and 8,468,038, relating to systems and methods for determining the valuation of a damaged vehicle for insurance purposes. Claims found invalid after CBM review, affirmed by the Federal Circuit. Contact: David McPhie, Esq., Irell & Manella LLP, 840 Newport Center Dr., Newport Beach, CA 29660. (R)

181. *Skimlinks, Inc. et al. v. Linkgine, Inc.*, Patent Trial and Appeal Board (2015). Served as an expert for petitioners in covered business method petitions 2015-00086 and 2015-00087 seeking review of U.S. Patents 7,818,214 and 8,027,883, relating to modifying affiliate links on webpages. Result: all claims found invalid, affirmed by the Federal Circuit. Contact: Richard F. Martinelli. Esq., Orrick, Herrington & Sutcliffe LLP, 51 West 52nd St., New York, NY 10019. (R)

182. *Advanced Auctions, LLC. v. eBay, Inc.*, Case 12-cv-1612-BEN (JLB) (S.D. Cal.). Served as an expert for defendant eBay in case alleging infringement of U.S. Patent 8,266,000, relating to methods of conducting Internet auctions. Defendant obtained judgment of invalidity on the pleadings under 35 U.S.C. §101. Contact: Adrian Percer, Esq., Weil, Gotshal & Manges, LLP, 201 Redwood Shores Parkway, Redwood Shores, CA 94065.

183. *MaxMind, Inc. et al. v. Fraud Control Systems.com Corporation*, CBM2015-00094, Patent Trial and Appeal Board (2014). Served as an expert for petitioner in a covered business method petition seeking review of U.S. Patent 8,630,942, relating to methods of determining whether a payment transaction may be fraudulent based on IP addresses. Review was instituted on §101 grounds and Patent Owner requested adverse judgment. Contact: Anthony H. Son, Esq., Maddox Edwards, PLLC, 1900 K Street NW, Suite 725, Washington, DC 20006. (R)

184. *Square, Inc. v. Unwired Planet, LLC*, CBM2014-00156, Patent Trial and Appeal Board (2014). Served as an expert for petitioner in a covered business method petition seeking review of U.S. Patent 7,711,100, relating to conducting point-of-sale transactions based on the location of a wireless device. Challenged claims found invalid. Contact: Sasha G. Rao, Esq., Maynard Cooper and Gale PC, 275 Battery St., San Francisco, CA 94111 (D,R)

185. *Unified Patents, Inc. v. Finnavations LLC*, IPR2015-01209, Patent Trial and Appeal Board (2015). Served as an expert for petitioner in an inter partes review of U.S. Patent 8,132,720, relating to verifying online transaction data through a graphical user interface. Status: not instituted. Contact: Paul C. Haughey, Esq., Kilpatrick Townsend & Stockton LLP, Eighth Floor, Two Embarcadero Center San Francisco, CA 94111 (R)

186. *Hoskin Hogan et al. v. BP West Coast Products LLC et al.*, Case BC 460880 (Super. Ct. Los Angeles Cty. CA, 2011). Served as an expert for defendant Retalix Ltd., alleging negligence in the development and testing of software for processing point-of-sale transactions. Summary

judgment granted in favor of Retalix. Contact: Richard H. Zelichov, Esq., Katten Muchin Rosenman LLP, 2029 Century Park East, Suite 2600, Los Angeles, CA 90067-3012. (D,R)

187. *In re U.S. Patent Application 12/912,726* (USPTO). Served as an expert for applicant AlmondNet, Inc. in an application for a patent relating to distributing digital advertising based on a recipient profile. PTAB affirmed the Examiner's § 101 rejection. Contact: Louis J. Hoffman, Esq., Hoffman Patent Firm. (R)

188. *Wickfire, LLC v. TriMax Media, Inc. et al.*, C.A. 1:14-CV-34 (W.D. Tex). Served as an expert for defendants in a case alleging click fraud in Internet advertising. Jury verdict for Plaintiff, reversed on appeal to the Fifth Circuit. Contact: Barry M. Golden, Esq., Miller, Egan, Molter & Nelson LLP, 2911 Turtle Creek Blvd., Suite 1100 Dallas, TX 75219. (D,R,T)

189. *Square, Inc. v. Unwired Planet, LLC*, CBM2015-00148, Patent Trial and Appeal Board. Served as an expert for petitioner in a covered business method petition seeking review of U.S. Patent 7,711,100, relating to conducting point-of-sale transactions based on the location of a wireless device. Not instituted because claims were found invalid under § 101 in CBM2014-00156. Contact: Sasha G. Rao, Esq., Maynard Cooper and Gale PC, 275 Battery St., San Francisco, CA 94111. (D,R)

190. *Datatrak International Inc. v. Medidata Solutions, Inc.*, C.A. 1:11-cv-00458-PAG (N.D. Ohio). Served as an expert for defendant in a case alleging infringement of U.S. Patent 7,464,087, relating to federated database queries. Defendant obtained summary judgment of invalidity under 35 U.S.C. §101. Contact: Duane-David Hough, Esq., Mayer Brown LLP, 1675 Broadway, New York, NY 10019. (R)

191. *SNMP Research, Inc. et al. v. Avaya, Inc.*, C.A. 1:12-cv-00191-RGA-MPT (D. Del.). Served as an expert for Avaya in an action alleging breach of contract, trade secret misappropriation and copyright infringement involving software implementing the Simple Network Management Protocol (SNMP). Case has settled. Contact: Joshua Krumholz, Esq., Holland & Knight, LLP, 10 St. James Avenue, 11th Floor, Boston, MA 02116. (D,R)

192. *Certain Automated Teller Machines and Point of Sale Devices and Associated Software Therefor*, USITC Inv. No. 337-TA-958. Served as an expert for Respondents NRT Technology Corp. et al. in an International Trade Commission proceeding brought by Complainant Global Cash Access Inc. involving alleged infringement of U.S. Patent 6,081,792, relating to structuring ATM and POS transactions with respect to withdrawal limits. Result: all claims found invalid as indefinite. In affirming this determination, the Commission wrote: "should the extrinsic evidence be considered, the Commission finds NRT's expert testimony credible, see Rebuttal Expert Report of Michael Shamos Regarding Claim Construction ¶¶ 52-58, and that Everi's expert's testimony is not credible." Contact: Colby B. Springer, Esq., Polsinelli LLP (formerly at Lewis Roca Rothgerber LLP), Three Embarcadero Center, Suite 1350, San Francisco, CA 94111. (D,R)

193. *Better Mouse Company, L.L.C. v. SteelSeries ApS, Inc. et al.*, C.A. 2:14-cv-198-JRG (E.D. Texas). Served as an expert for defendant in a case alleging infringement of U.S. Patent

7,532,200, relating to computer mouse whose resolution can be set without external software. Dr. Shamos testified at trial on non-infringement. The jury found for defendant on non-infringement. Contact: Joshua M. Masur, Esq., Zuber Lawler & Del Duca LLP, 2000 Broadway, Suite 154, Redwood City, California 94063. (Original firm: Turner Boyd LLP) (R,T)

194. *Vesta Corporation v. Amdocs Management Limited et al.*, No. 3:14-cv-01142-HZ (D. Ore.). Served as an expert for defendants in a case alleging misappropriation of trade secrets relating to billing in the prepaid mobile phone payment processing market. Case has settled. Contact: Yonaton M. Rosenzweig, Esq., Katten Muchin Rosenman LLP, 2029 Century Park East, Suite 2600, Los Angeles, CA 90067-3012. (D,R)

195. *Benefit Funding Systems, LLC et al. v. U.S. Bancorp*, CA 1:12-cv-00803-LPS (D.Del.). Served as an expert for defendant U.S. Bancorp in an action alleging infringement of U.S Patent 6,625,582, relating to a method of establishing a financial account based on the present value of future retirement payments. All asserted claims were found invalid under 35 U.S.C. §101, a decision affirmed by the Federal Circuit. Contact: Contact: Anthony H. Son, Esq., Maddox Edwards, PLLC, 1900 K Street NW, Suite 725, Washington, DC 20006. (Original firm: Wiley Rein).

196. *Telesign Corporation v. Twilio, Inc.*, C.A. 3:18-cv-03279-VC (N.D. Cal.). Served as an expert for defendant Twilio in an action alleging infringement of U.S. Patent 7,945,034, relating to verification of telephone users based on characteristics of the telephone number, such as carrier and geographic location. Defendant successfully resisted issuance of a preliminary injunction. Case is stayed pending PTAB review. After PTAB review, Twilio's motion for judgment on the pleadings was granted. Contact: Thomas J. Friel, Jr., Esq., Cooley LLP, 3175 Hanover Street, Palo Alto, CA 94304. (R)

197. *Cronos Technologies, LLC v. Expedia, Inc.*, C.A. 13-1538-LPS (D. Del.), *Cronos Technologies, LLC v. Priceline.com, Inc.*, C.A. 13-1541-LPS (D. Del.) and *Cronos Technologies, LLC v. Travelocity.com L.P.*, C.A. 13-1544-LPS (D. Del.). Served as an expert for defendants in three cases, consolidated for some purposes, in actions alleging infringement of U.S. Patent 5,664,110, relating to a remote ordering system enabling a user to build lists of products to be ordered. The Court found non-infringement on summary judgment, affirmed unanimously by the Federal Circuit. Contact: Matthew C. Acosta, Esq., Jackson Walker LLP, KPMG Plaza at Hall Arts, 2323 Ross Avenue, Suite 600, Dallas, TX 75201. (D,R)

198. *Ex Parte Reexamination of U.S. Patent 7,333,430*, Control No. 90/013,532. Served as an expert for patent owner Fortinet, Inc. in a reexamination of U.S. Patent 7,333,430, drawn to distributing network packets for intermediate security processing based on the ultimate destination of the packet. Result: all challenged claims and newly presented claims patentable. Contact: Michael A. DeSanctis, Hamilton DeSanctis & Cha LLP, Financial Plaza at Union Square, 225 Union Boulevard, Ste. 150, Lakewood, CO 80228. (R)

199. *ServiceNow, Inc. v. Hewlett-Packard Company*, Case IPR2015-00717 (PTAB). Served as an expert for patent owner Hewlett-Packard Company in an inter partes review of U.S. Patent 7,027,411, drawn to efficient determination of changes in network topology. Status: settled.

Contact: Monica Grewal, Esq., Wilmer Cutler Pickering Hall and Dorr LLP, 60 State Street, Boston, MA 02109. (D,R)

200. *Intellectual Ventures I LLC v. Nextel Operations, Inc. and Sprint Spectrum L.P.*, C.A. No. 13-1634 (D.Del) and related cases 13-1635; *Intellectual Ventures I LLC v. T-Mobile USA, Inc. et al.*, C.A. No. 13-1632; 13-1633; *Intellectual Ventures I LLC v. United States Cellular Corporation*, C.A. No. 13-1636 and related case 13-1637, all D. Del. Served as an expert for defendants Sprint, T-Mobile and U.S. Cellular in related cases alleging infringement of U.S. Patent 6,115,737, drawn to use of an Internet gateway for processing customer service requests to a web server. The Court invalidated the '737 patent on §101 grounds. Contact: Jason W. Cook, Esq., McGuireWoods LLP, 2000 McKinney Ave., Suite 1400, Dallas, TX 75201. (D,R)

201. *Ex Parte Reexamination of U.S. Patent 7,968,744*, Control No. 90/013,533. Served as an expert for patent owner Fortinet, Inc. in a reexamination of U.S. Patent 7,968,744, drawn to systems and methods for allowing execution of authorized computer code and for protecting computer systems and networks from unauthorized code execution. Result: challenged claim and 14 new claims determined patentable. Contact: Michael A. DeSanctis, Hamilton DeSanctis & Cha LLP, Financial Plaza at Union Square, 225 Union Boulevard, Ste. 150, Lakewood, CO 80228. (R)

202. *Ex Parte Reexamination of U.S. Patent 7,376,125*, Control No. 90/013,531. Served as an expert for patent owner Fortinet, Inc. in a reexamination of U.S. Patent 7,376,125, drawn to a virtual routing engine for software-based packet routing. Result: newly presented claims patentable. Contact: Michael A. DeSanctis, Hamilton DeSanctis & Cha LLP, Financial Plaza at Union Square, 225 Union Boulevard, Ste. 150, Lakewood, CO 80228. (R)

203. *Twilio, Inc. v. Telesign Corporation*, IPR2016-00360. Served as an expert for requester Twilio in an *inter partes* review of U.S. Patent 7,945,034, relating to verification of telephone users based on characteristics of the telephone number, such as carrier and geographic location. Challenged claims confirmed. Contact: Thomas J. Friel, Jr., Esq., Cooley LLP, 3175 Hanover Street, Palo Alto, CA 94304. (D,R)

204. *Twilio, Inc. v. Telesign Corporation*, IPR2016-00450, Patent Trial and Appeal Board (2016). Served as an expert for petitioner in an *inter partes* review of U.S. Patent 8,462,920, relating to verification of telephone users based on characteristics of the telephone number, such as carrier and geographic location. Trial was not instituted. Contact: Contact: Carrie J. Richie, Esq., Cooley LLP, 3175 Hanover Street, Palo Alto, CA 94304. (R)

205. *Smart Systems Innovations, LLC v. Chicago Transit Authority, et al.*, C.A. 14-cv-08053 (N.D. Ill.). Served as an expert for defendants in an action alleging infringement of U.S. Patent 5,828,044, relating to a radio-frequency ID (RFID) credit card system. Defendant successfully resisted issuance of a preliminary injunction. All claims invalidated as non-statutory under 35 U.S.C. §101. Affirmed by the Federal Circuit in October 2017. Contact: Jeffrey M. Connor., Esq., formerly at Kilpatrick Townsend & Stockton LLP, now IP counsel at Honeywell. (D,R)

206. *Unwired Planet LLC v. Google, LLC*, C.A. 3:12-cv-00504-MMD-VPC (D. Nevada). Served as an expert for Google in an action alleging infringement of U.S. Patents 6,292,657, 6,654,786, 6,662,016, 6,684,087, 6,895,240, 6,944,760, 7,024,205, 7,035,647, 7,203,752 and 7,463,151, relating to provision of wireless services. All asserted claims of the '151, '205 and '751 patents have been found invalid by the Patent Trial and Appeal Board. After appeal to the Federal Circuit, the case continued with respect to certain claims of the '752 Patent but these were dismissed by stipulation. Contact: Peter E. Gratzinger, Esq., Munger, Tolles & Olson LLP, 355 South Grand Avenue, Los Angeles, CA 90071.

207. *Xilidev, Inc. v. Boku, Inc. et al.*, C.A. 3:13-cv-02793 (S.D. Cal.). Served as an expert for defendants in an action alleging infringement of U.S. Patent 7,273,168, relating to point-of-sale billing on handheld devices. Claims 1-18 and 20-23 of the '168 patent have been found invalid by the Patent Trial and Appeal Board. Plaintiff agreed to a voluntary dismissal with prejudice. Contact: Frank Pietrantonio, Esq., Cooley LLP, One Freedom Square, 11951 Freedom Drive, Reston, VA 20190.

208. *Intellectual Ventures II LLC v. Commerce Bancshares, Inc. et al.*, C.A. 2:13-CV-04160 (W.D. Mo.). Served as an expert for defendants in an action alleging infringement of U.S. Patents 5,745,574, relating to security in electronic transactions, 6,314,409 and 6,826,694, relating to controlling access to digital property, 6,715,084, relating to intrusion detection, and 7,634,666, relating to a cryptographic engine. All asserted claims have been declared invalid by the Patent Trial and Appeal Board. Decision affirmed by the Federal Circuit in December 2016. Contact: Mark Vander Tuig, Esq., Senniger Powers LLP, 100 North Broadway, 17th Floor, St. Louis, MO 63102.

209. *Hy-Vee, Inc. v. Inmar Digital Promotions Network, Inc.*, C.A. 4:15-cv-00275 (S.D. Iowa). Served as an expert for defendant in an action seeking indemnity for infringement of U.S. Patents 8,219,445, 8,370,199 and 8,538,805, relating to point-of-sale processing of promotions, such as coupons. Hy-Vee had been sued for infringing these patents in *Advanced Marketing Systems, LLC v. Hy-Vee, Inc.*, C.A. 3:15-cv-00103 (W.D. Wisc.). Both cases have settled. Contact: Richard J. Keshian, Esq., Kilpatrick Townsend & Stockton LLP, 1001 West Fourth Street Winston-Salem, NC, 27101. (R)

210. *Motivation Innovations, LLC v. PetSmart, Inc.*, C.A. 1:13-cv-00957 (D.Del.). Served as an expert for defendant in an action alleging infringement of U.S. Patent 5,612,527, relating to a system for redeeming discount offers at point of sale. On motion for judgment on the pleadings, all asserted claims were found invalid under 35 U.S.C. §101. Contact: Kevin A. Zeck, Esq., Perkins Coie, LLP, 1201 Third Avenue, Suite 4900, Seattle, WA 98101-3099.

211. *PPS Data, LLC v. VSoft Corporation et al.*, Case 1:15-cv-00084 (N.D. Ga.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 7,181,430, 7,216,106, 7,440,924, 7,624,071 and 8,660,956, relating to methods for processing check images in electronic payment systems. Case has settled. Contact: Anthony H. Son, Esq., Maddox Edwards, PLLC, 1900 K Street NW, Suite 725, Washington, DC 20006 (original firm Andrews Kurth).

212. *Sally Beauty Holdings et al. v. Intellectual Ventures I LLC*, CBM2016-00029, Patent Trial and Appeal Board. Served as an expert for petitioner in a covered business method petition seeking review of U.S. Patent 5,969,324, relating to accounting methods utilizing a non-predictable bar code. Trial was instituted, the PTAB writing in its decision: "We credit the testimony of Dr. Michael Shamos." Case has settled. Contact: Derek Swanson, Esq., McGuireWoods LLP, Gateway Plaza, 800 East Canal Street, Richmond, VA 23219. (R)

213. *Square, Inc. v. Protegrity Corporation*, CBM2015-00014, Patent Trial and Appeal Board (2016). Served as an expert for petitioner in a covered business method petition seeking review of U.S. Patent 6,321,201, relating to methods of encrypting databases. Result: all challenged claims found invalid under 35 U.S. §§101 and 103. Contact: Matthew Argenti, Esq., Wilson Sonsini Goodrich & Rosati Professional Corporation, 650 Page Mill Road, Palo Alto, CA 94304-1050. (R)

214. *T-Mobile US, Inc. v. Intellectual Ventures II LLC*, CBM2016-00083, Patent Trial and Appeal Board. Served as an expert for petitioner in a covered business method petition seeking review of U.S. Patent 6,115,737, relating to use of an Internet gateway for processing customer service requests to a web server. The PTAB determined that the patent did not claim a covered business method. Contact: Alison R. Watkins, Esq., Gibson, Dunn & Crutcher LLP, 1881 Page Mill Road, Palo Alto, CA 94304-1211. (R)

215. *Twin Peaks Software, Inc. v. IBM Corporation*, Case 3:14-cv-03933-JST (N.D. Cal.). Served as an expert witness for defendant IBM in an action alleging infringement of U.S. Patent 7,418,439, relating to a system for storing and sharing networked files. All asserted claims found invalid during claim construction. Contact: Andrew Bramhall, Esq., Quinn Emanuel Urquhart & Sullivan, LLP, 555 Twin Dolphin Drive, 5th Floor, Redwood Shores, CA 94065-2139.

216. *Live Face on Web, LLC v. The Control Group Media Company, Inc. et al.*, Case 2:15-cv-01306 (E.D. Pa.). Served as an expert witness for defendants in an action alleging breach of contract and infringement of copyrights relating to web media players and video productions in which recorded actors promote products for websites. Case has settled. Contact: Damon W.D. Wright, Esq., Venable LLP, 575 Seventh St. N.W., Washington, DC 20004.

217. *Nomadix, Inc. v. Hospitality Core Services, LLC*, Case 2:14-cv-08256-DDP (C.D. Cal.) Served as an expert witness for defendant in a case alleging infringement of U.S. Patents 6,636,894 and 6,868,399, relating to network gateways, U.S. Patent 7,698,432, relating to bandwidth management, U.S. Patent 7,953,857, relating to dynamic data transfer over networks, U.S. Patent 8,266,266, relating to dynamic network authorization, and U.S. Patents 8,156,246, 8,266,269, 8,364,806, 8,725,888 and 8,788,690, relating to providing network content. Case has settled. Contact: Michael J. Mehrman, Merhman Law Office, P.C., 150 Spalding Creek Court, Sandy Springs, GA 30350.

218. *Certain Digital Video Receivers and Hardware and Software Components Thereof*, USITC Inv. No. 337-TA-1001. Served as an expert for Complainants Rovi Corporation et al. against Comcast Corporation et al. in an International Trade Commission proceeding involving alleged infringement of U.S. Patents 8,006,263 , 8,046,801 and 8,578,413, relating to remote

and local electronic TV program guides. On Final Determination, a violation was found with respect to the '263 and '413 patents. Affirmed by the Federal Circuit on March 20, 2020. Contact: Richard A. Kamprath, Esq., McKool Smith, 300 Crescent Court, Suite 1500, Dallas, TX 75201. (D,R,T)

219. *ZKey Investments, LLC v. Facebook, Inc.*, Case 2:16-cv-00782-RSWL-KS (C.D. Cal.). Served as an expert for defendant in a case alleging infringement of U.S. Patent 6,820,204, relating to providing granular control over access to data. Result: all claims found invalid under §101. Affirmed by the Federal Circuit on Jan. 10, 2018. Contact: Andrew C. Mace, Esq., Cooley LLP, 3175 Hanover Street, Palo Alto, CA 94304. (R)

220. *In re: The Matter of the 2016 Presidential Election,* 659 MD 2016 (Pa. Cmwlth. Ct., 2016). Served as an expert for intervenors opposing an action brought seeking a recount of votes in Pennsylvania on the grounds that the state's voting systems are unsecure and vulnerable to hacking by foreign actors. Petitioners discontinued the suit before hearing, refusing to post the required bond. Contact: Lawrence J. Tabas, Esq., Obermayer Rebmann Maxwell & Hippel LLP, One Penn Center, 19th Floor, 1617 John F. Kennedy Blvd., Philadelphia, PA 19103.

221. *Stein v. Cortés,* Case 2:16-cv-06287-PD (E.D. Pa.). Served as an expert for defendant Secretary of the Commonwealth of Pennsylvania in an action for a mandatory injunction to compel a recount and forensic examination of voting systems. Result: injunction denied. The Court's memorandum comments favorably on Dr. Shamos's qualification and testimony. Most claims have been dismissed on summary judgment. Case has settled. Contact: Timothy Gates, Esq., Chief Counsel, PA Department of State, 3306 North Office Bldg., Harrisburg, PA 17120. (R,T)

222. *Free Stream Media Corp. (d.b.a. Samba) v. Alphonso Inc.*, Case No. 3:17-cv-02107 (N.D. Cal., transferred from E.D. Tex.). Served as an expert for defendant Alphonso in an action alleging infringement of U.S. Patents 9,026,668 and 9,386,356, relating to a system for targeting data, such as advertising, to a device, such as a tablet, based on content that is identified as playing on a different device, such as a television. Alphonso won summary judgment of non-infringement. Contact: Neel Chatterjee, Esq., Goodwin Procter LLP, 601 Marshall Street, Redwood City, CA 94063. (D,R)

223. *Copart, Inc. v. Sparta Consulting, Inc.*, Case 2:14-cv-00046-KJM-CKD (E.D. Cal.). Served as an expert for defendant Sparta in an action alleging misappropriation of trade secrets relating to imaging batches of items to be offered at auction. Misappropriation counts were dropped during trial. Contact: Frederick Brown, Esq., Gibson, Dunn & Crutcher LLP, 555 Mission Street, Suite 3000, San Francisco, CA 94105. (D,R)

224. *Apple Inc. v. Masa LLC.*, IPR2016-00748, Patent Trial and Appeal Board (2016). Served as an expert for patent owner in an *inter partes* review of U.S. Patent 8,519,834, relating to a wearable device to alert a user to an incoming cellphone call. All challenged claims found invalid. Affirmed by the Federal Circuit. Contact: Robert M. Evans, Jr., Esq., Lewis Rice LLC, 600 Washington Avenue, Suite 2500, St. Louis, MO 63101. (R)

225. *Tele-Publishing, LLC v. Facebook, Inc. et al.,* Case 1:09-cv-11686-DPW (D. Mass.). Served as an expert for defendants in a case alleging infringement of U.S. Patent 6,253,216, relating to controlling access to information on personal web pages. Result: all claims found invalid under §101; judgment for defendants. Case settled during appeal to the Federal Circuit. Contact: Reuben Chen, Esq., Cooley LLP, 3175 Hanover Street, Palo Alto, CA 94304. (R)

226. *Groupon, Inc. v. International Business Machines Corporation,* Case 1:16-cv-5064 (N.D. Ill.). Served as an expert for Groupon in a case alleging infringement of U.S. Patent 7,856,360, relating to gathering information from attendees at a venue. Case has settled. Contact: Saina Shamilov, Esq., Fenwick & West LLP, 801 California Street, Mountain View, CA 94041. (R)

227. *Stingray Digital Group Inc. v. Music Choice,* Patent Trial and Appeal Board. Served as an expert for petitioner in six *inter partes* reviews of U.S. Patents 7,320,025 (IPR2017-00888) and 9,351,045 (IPR2017-01191), relating to providing supplementing a broadcast media service with an on-demand, personalized media service and U.S. Patents 8,769,602 (IPR2017-01192), 9,357,245 (IPR2017-1193, IPR 2018-0114), relating to providing a visual complement to an audio program, and 9,414,121 (IPR 2017-1450), relating to systems and methods for providing on-demand entertainment. Trial has been instituted in '025, '045, '121 and '602. Patent owner requested adverse judgment in IPR2017-1193. Two claims survived in IPR2018-00114. Contact: Heath Briggs, Esq., Greenberg Traurig, LLP, 1200 17th St., Suite 2400, Denver, CO 80202. (D,R)

228. *Music Choice v. Stingray Digital Group Inc. et al.,* C.A. No. 2:16-CV-0586-JRG-RSP (E.D. Texas). Served as an expert for defendants in a case alleging infringement U.S. Patents 7,320,025 and 9,351,045, relating to providing supplementing a broadcast media service with an on-demand, personalized media service, U.S. Patents 8,769,602 and 9,357,245, relating to providing a visual complement to an audio program, and U.S. Patent 9,414,121, relating to systems and methods for providing on-demand entertainment. Case has settled. Contact: Joshua Raskin, Esq., Greenberg Traurig, LLP, MetLife Bldg., 200 Park Avenue, New York, NY 10166. (R)

229. *LivePerson, Inc. v. 24[7] Customer, Inc.,* IPR2017-00609, Patent Trial and Appeal Board. Served as an expert for patent owner in an *inter partes* review of U.S. Patent 6,970,553, relating to converting a voice call into a chat session. Four of six challenged claims were not found unpatentable. Contact: Bill Trac, Esq., O'Melveny & Myers LLP, Two Embarcadero Center, 28th Floor, San Francisco, CA 94111. (R)

230. *Blackberry Limited v. Blu Products, Inc.,* Case 1:16-cv-23535-FAM (S.D. Fla.). Served as an expert for defendants in a case alleging infringement of 15 patents, including U.S. Patent 6,271,605, relating to a battery disconnect system, U.S. Patent 8,169,449, relating to a multilayer graphics controller, and U.S. Patent 8,411,845, relating to the display of call logs on mobile phones. Case has settled. Contact: Victor Castellucci, Esq., Cozen O'Connor, 2 South Biscayne Blvd., 30th Floor, Miami, FL 33131. (R)

231. *Twitter, Inc. v. YouToo Technologies, LLC.,* Patent Trial and Appeal Board. Served as an expert for patent owner in two *inter partes* reviews of U.S. Patent 9,083,997 (IPR2017-00829,

IRP2017-00830), relating to publishing content on social media sites. All challenged claims found unpatentable. Contact: Samuel E. Joyner, Esq., Carrington, Coleman, Sloman & Blumenthal, LLP, 901 Main Street, Suite 5500, Dallas, TX 75202. (R)

232. *IPDEV Co. v. Ameranth, Inc.*, Case No. 3:14-cv-01303-GPC-JLB (S.D. Cal.). Served as an expert for defendant in an action to determine priority of invention among interfering patents involving U.S. Patents 6,384,850 and 6,871,325, assigned to Ameranth and relating to synchronous updating of restaurant menus on wireless devices, and U.S. Patents 5,991,739 and 8,738,449, relating to Internet ordering methods. Consolidated with Case 233, below. On summary judgment, the Court awarded priority to Ameranth. Contact: John W. Osborne, Esq., Osborne Law LLC, 33 Habitat Lane, Cortlandt Manor, NY 10567. (D,R)

233. *In re: Ameranth Patent Litigation*, Case No. 3:11-cv-01810-DMS-WSG (S.D. Cal.). Served as an expert for Ameranth in an action against numerous defendants alleging infringement of U.S. Patents 8,146,077, relating to synchronous updating of restaurant menus on wireless devices. All asserted claims were found invalid under 35 U.S.C. § 101, affirmed by the Federal Circuit. Contact: John W. Osborne, Esq., Osborne Law LLC, 33 Habitat Lane, Cortlandt Manor, NY 10567. (D,R)

234. *Google Inc. v. Spring Ventures, Ltd.*, IPR2017-01652 and 01653, Patent Trial and Appeal Board. Served as an expert for petitioner in *inter partes* reviews of U.S. Patent 8,661,094, relating to WWW addressing. Trial instituted in 2017-01653, denied in 2017-01652. Result: all claims of the '094 patent were determined to be unpatentable. Affirmed on appeal to the Federal Circuit. At oral argument, Dr. Shamos's qualifications were challenged unsuccessfully. Contact: Scott McKeown, Esq., Ropes & Gray, L.L.P., 2099 Pennsylvania Avenue, Washington, DC 20006-6807. (D,R)

235. *Rovi Guides, Inc. et al. v. Comcast Corporation et al.*, Case No. 1:16-cv-09278-JPO (S.D.N.Y.). Served as an expert for plaintiffs in an action alleging infringement of U.S. Patent 8,713,595, relating to electronic TV program guides and 9,172,987, relating to the use of markup language to alter the functionality of set-top boxes. Case has settled. Contact: Richard A. Kamprath, Esq., McKool Smith, 300 Crescent Court, Suite 1500, Dallas, TX 75201. (D,R)

236. *StrikeForce Technologies, Inc. v. Entrust, Inc. et al.*, Case No. 1:17-cv-00309-LMB-TCB (E.D. Va.). Served as an expert for plaintiff in an action alleging infringement of U.S. Patents 8,484,698, and 8,713,701, relating to out-of-band authentication using mobile devices. Case has settled. Contact: Josef Schenker, Esq., Ropes & Gray LLP, 1211 Avenue of the Americas, New York, NY 10036. (R)

237. *Level One Technologies, Inc. v. Penske Truck Leasing Co, Inc. and Penske Logistics, LLC*, Case No. 4:14-cv-1305-RWS (E.D. Mo.). Served as an expert for defendant in an action alleging trade secret misappropriation and contractual breach of confidentiality relating to a computer system for invoicing and rendering electronic payments in the trucking industry. Case has settled. Contact: Douglas Y. Christian, Esq., Ballard Spahr LLP, 1735 Market Street, 51st Floor, Philadelphia, PA 19103. (D,R)

238. *Uniloc USA Inc. et al. v. Netsuite Inc.*, Case No. 2:16-cv-00862-RWS (E.D. Texas) and *Uniloc USA Inc. et al. v. Nutanix Inc.*, Case No. 2:16-cv-01193-RWS (E.D. Texas). Served as an expert for plaintiff on claim construction issues in an action alleging infringement of U.S. Patent 6,324,578, relating to management of configurable application programs on a network. Later, the asserted claims were found invalid under 35 U.S.C. § 101. Contact: James J. Foster, Esq., Prince Lobel Tye LLP, One International Place, Suite 3700, Boston, MA 02110. (R)

239. *Muransky v. The Cheesecake Factory, Inc. et al.*, Case 2:17-cv-07569-CJC-RAO (C.D. Cal). Served as an expert for defendants in a case involving alleged violations of the Fair Credit Reporting Act, 15 U.S.C. § 1681 ("FCRA") arising from display of more than five digits of a credit card number on customer receipts. Case has settled. Contact: John L. McManus, Esq., Greenberg Traurig, P.A., 401 E. Los Olas Blvd., Suite 2000, Fort Lauderdale, FL 33301. (R)

240. *Twilio, Inc. v. Telesign Corporation*, IPR2016-00451, Patent Trial and Appeal Board (2016). Served as an expert for petitioner in an *inter partes* review of U.S. Patent 8,687,038, relating to verifying an online registration via an out-of-band telephone connection. Trial was not instituted. Contact: Contact: Carrie J. Richie, Esq., Cooley LLP, 3175 Hanover Street, Palo Alto, CA 94304. (R)

241. *Twilio, Inc. v. Telesign Corporation*, IPR2016-01688, Patent Trial and Appeal Board (2016). Served as an expert for petitioner in an *inter partes* review of U.S. Patent 9,300,792, relating to verification of telephone users based on characteristics of the telephone number, such as carrier and geographic location. All challenged claims found unpatentable. Contact: Contact: Carrie J. Richie, Esq., Cooley LLP, 3175 Hanover Street, Palo Alto, CA 94304. (R)

242. *EdiSync Systems, LLC v. Adobe Systems, Inc.*, Civil Action 12-cv-02231-MSK-MEH (D. Colo.). Served as an expert for Defendant Adobe in a case alleging infringement of U.S. Patent 5,799,320, relating to multi-author document editing systems. Case has settled. Contact: David Sipiora, Esq., Kirkpatrick Townsend & Stockton LLP, Suite 600, 1400 Wewatta Street, Denver, CO 80202.

243. *Ford Motor Company v. Versata Software, Inc. et al.*, Case No. 2:15-cv-10628-MFL-EAS (E.D. Mich.). Served as an expert for defendant/counter-plaintiff Versata in a declaratory judgment action relating to alleged infringement of U.S. Patents 5,825,651, 6,405,308 and 6,675,294, relating to product configuration through a graphical user interface; U.S. Patent 7,882,057, relating to complex product configuration using submodels; U.S. Patents 7,200,582 and 7,464,064, relating to checking the consistency of a product configuration model using set equations; and U.S. Patent 8,805,825, relating to product configuration in which attributes are prioritized. Result: jury vedict for Versata for $105 million. Contact: Steve Mitby, Esq., Mitby Pacholder Johnson PLLC, 1001 McKinney St., Suite 925, Houston, TX 77002. (D,R)

244. *Improved Search LLC v. Microsoft Corporation*, C.A. No. 16-cv-650-JFB-SRF (D.Del.). Served as an expert for plaintiff in an action alleging infringement of U.S. Patents 6,604,101 and 7,516,154, relating to methods and systems for translingual searching. Plaintiff sought a judgment of non-infringement so claim constructions could be appealed to the Federal Circuit.

Result: affirmed. Contact: Robert Yorio, Esq., Carr & Ferrell LLP, 120 Constitution Drive, Menlo Park, CA 94025. (D,R)

245. *Comcast Cable Communications, LLC v. Rovi Guides, Inc.*, IPR2017-00866, IPR2017-00867, Patent Trial and Appeal Board. Served as an expert for patent owner in *inter partes* reviews of U.S. Patent 8,713,595, relating to electronic television program guides. All challenged claims found unpatentable. Contact: Josef B. Schenker, Ropes & Gray LLP, 1211 Avenue of the Americas, New York, NY 10036. (D,R)

246. *Comcast Cable Communications, LLC v. Rovi Guides, Inc.*, IPR2017-00950, IPR2017-00951, IPR2017-00952, Patent Trial and Appeal Board. Served as an expert for patent owner in *inter partes* reviews of U.S. Patent 8,006,263, relating to electronic television program guides. All challenged claims found unpatentable. Contact: Josef B. Schenker, Ropes & Gray LLP, 1211 Avenue of the Americas, New York, NY 10036. (D,R)

247. *Unified Patents, Inc. v. Anuwave LLC.*, IPR2018-00223, Patent Trial and Appeal Board. Served as an expert for petitioner in *inter partes* reviews of U.S. Patent 8,295,862, relating to enabling short message system (SMS) communication without using IP services. Terminated by settlement. Contact: Robert High, Esq., Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, 271 17th St. N.W., Suite 1400, Atlanta, GA 30363-6209. (R)

248. *Comcast Cable Communications, LLC v. Rovi Guides, Inc.*, IPR2017-01048, IPR2017-01049, IPR2017-01050, Patent Trial and Appeal Board. Served as an expert for patent owner in *inter partes* reviews of U.S. Patent 8,578,413, relating to electronic television program guides. All challenged claims found unpatentable. Contact: Josef B. Schenker, Ropes & Gray LLP, 1211 Avenue of the Americas, New York, NY 10036. (D,R)

249. *Comcast Cable Communications, LLC v. Rovi Guides, Inc.*, IPR2017-01065, IPR2017-01066, IPR2017-01143, Patent Trial and Appeal Board. Served as an expert for patent owner in *inter partes* review of U.S. Patent 8,046,801, relating to electronic television program guides. All challenged claims found unpatentable. Contact: Josef B. Schenker, Ropes & Gray LLP, 1211 Avenue of the Americas, New York, NY 10036. (D,R)

250. *DevFactory FZ-LLC v. Magnitude Software, Inc.*, Arbitration WIPOA300617. Served as an expert for Claimant DevFactory in an arbitration relating to a claim of breach of a software Technology Services Agreement. Arbitration has terminated. Contact: Steve Mitby, Esq., Ahmad, Zavitsanos, Anaipakos, Alavi & Mensing P.C., 1221 McKinney, Suite 2500, Houston, TX 77010.

251. *BookIT Oy Ajanvarauspalvelu v. Bank of America Corporation et al.*, 3:17-cv-02577-K (N.D. Texas). Served as an expert for BookIT in an action alleging infringement of U.S. Patents 8,589,194 and 9,177,268, relating to mediating communications between a service provider and a user in a telecommunications network. Plaintiff sought a judgment of non-infringement so that claim constructions could be appealed to the Federal Circuit, which affirmed. Contact:

Richard A. Kamprath, Esq., McKool Smith, 300 Crescent Court, Suite 1500, Dallas, TX 75201. (D,R)

252. *Promptu Systems Corporation v. Comcast Corporation et al.*, 2:16-cv-06516-JS (E.D. Pa.). Served as an expert for plaintiff in an action alleging infringement of U.S. Patents 7,047, 196, 7,260,538 and RE44,326, relating to voice control of television set-top boxes. Plaintiff is appealing an adverse claim construction. Contact: Robert Yorio, Esq., Carr & Ferrell LLP, 120 Constitution Drive, Menlo Park, CA 94025. (D,R)

253. *Snap Inc. v. Vaporstream, Inc.*, IPR2018-00200, IPR2018-00312, IPR2018-00369, IPR2018-00397, IPR2018-00404, IPR2018-00408, IPR2018-00416, IPR2018-00439, IPR2018-00455, IPR2018-00458, Patent Trial and Appeal Board. Served as an expert for patent owner in *inter partes* reviews of U.S. Patents 8,886,739, 8,935,351, 9,306,885, 9,306,886, 9,313,155, 9,313,156, 9,313,157, 9,338,111 and 9,413,711, relating to reducing traceability of electronic messages. In IPR2018-00312, IPR2018-00369, IPR2018-00404 and IPR2018-00408 and IPR2018-00458, all challenged claims were found unpatentable. In IPR2018-00397, IPR2018-00416, IPR2018-00439 and IPR2018-00455, and IPR2018-00458, all challenged claims were found patentable. Contact: Douglas R. Wilson, Esq., Heim, Payne & Chorush, LLP, Heritage Plaza, 111 Bagby, Suite 2100, Houston, TX 77002. (R)

254. *Shopify, Inc. v. DDR Holdings, LLC*, IPR2018-01008, IPR2018-01009, IPR2018-01010, IPR2018-01011, IPR2018-01012, IPR2018-01014, Patent Trial and Appeal Board. Served as an expert for petitioner in *inter partes* reviews of U.S. Patents 8,515,825, 9,043,228, and 9,639,876, relating to online affiliate marketing. In 2018-01008 and 2018-01009, the PTAB found all challenged claims patentable. In 2018-01010, 2018-01011, 2018-01012 and 2018-01014, the PTAB found most challenged claims unpatentable, affirmed by the Federal Circuit in 2018-01011, 2018-01012 and 2018-01014. Contact: Jinnie L. Reed, Esq., Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., One Financial Center, Boston. MA 02111. (D,R)

255. *Election Systems & Software, LLC v. Dominion Voting Systems, Inc.*, 1:17-cv-01172-CJB (D. Del.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patent 8,991,701, relating to an accessible voting system. Case has settled. Contact: Robert M. Evans, Jr., Esq., Lewis Rice LLC, 600 Washington Avenue, Suite 2500, St. Louis, MO 63101.

256. *General Motors LLC et al. v. Dorman Products, Inc. et al.*, 2:15-cv-129170-VAR-EAS (E.D. Mich.). Served as an expert for plaintiff in a case alleging copyright infringement and violation of the anti-circumvention provisions of the Digital Millennium Copyright Act relating to offloading of transmission control software from automobiles. Case has settled. Contact: Aaron A. Barlow, Esq., Jenner & Block LLP, 353 North Clark Street, Chicago, IL 60654-3456.

257. *PPS Data, LLC v. Jack Henry & Associates, Inc.*, Case 2:18-cv-00007-JRG (E.D. Texas). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 7,181,430, 7,216,106, 7,440,924, 7,624,071 and 8,126,809, relating to methods for processing check images in electronic payment systems. The '430, '924, '071 and '809 patent were found invalid by the Court under 35 U.S.C. § 101. After a jury trial, all asserted claims of the '106

patent were found not infringed and invalid. Contact: Anthony H. Son, Esq., Maddox Edwards, PLLC, 1900 K Street NW, Suite 725, Washington, DC 20006. (D,R,T)

258. *NEXT Payment Solutions, Inc. v. CLEAResult Consulting, Inc.*, Case 1:17-cv-08829 (N.D. Illinois). Served as an expert for defendant in a case alleging misappropriation of trade secrets relating to a system for managing energy rebate appointments and inspections. The trade secret counts were dismissed on summary judgment. Contact: Anthony Fuga, Esq., Holland & Knight LLP, 131 S. Dearborn Street, 30th Floor, Chicago, IL 60603. (R)

259. *Certain Digital Video Receivers and Related Hardware and Software Components*, USITC Inv. No. 337-TA-1103. Served as an expert for Complainants Rovi Corporation et al. against Comcast Corporation et al. in an International Trade Commission proceeding involving alleged infringement of U.S. Patents 9,294,799, relating to resumption on a second device of video paused on a first device, and 9,578,363, relating to providing video in a format suitable for a particular device. Those patents were subsequently dropped. Dr. Shamos testified about his observation of user focus groups. The ITC issued an exclusion order, upheld by the Federal Circuit. Contact: Richard A. Kamprath, Esq., McKool Smith, 300 Crescent Court, Suite 1500, Dallas, TX 75201. (D,R,T)

260. *ARM Ltd. et al. v. Complex Memory, LLC*, IPR2019-00053, IPR2019-00058, Patent Trial and Appeal Board. Served as an expert for petitioners in *inter partes* reviews of U.S. Patent 5,890,195, relating to cache memory (SRAM) integrated with main memory (DRAM) and U.S. Patent 6,658,576, relating to an energy-conserving computer operating system. Outcome: both IPRs terminated by settlement. Contact: Kevin Anderson, Esq., Duane Morris LLP, 505 9th Street, NW, Suite 1000, Washington, DC 20004-2166. (R)

261. *Supercell Oy v. Gree, Inc.*, PGR2018-00070, PGR2018-00071, Patent Trial and Appeal Board. Served as an expert for patent owner in post-grant reviews of U.S. Patents 9,770,656 and 9,770,664, relating to user interfaces for multiplayer online games. Institution denied in both PGRs. Contact: Scott McKeown, Esq., Ropes & Gray, L.L.P., 2099 Pennsylvania Avenue, Washington, DC 20006-6807. (R)

262. *Amazon Services, LLC v. South Carolina Dept. of Revenue*, Docket No. 17-ALJ-0238-CC. (S.C. Admin. Ct.). Served as an expert for South Carolina in a tax dispute relating to online sales through Amazon's Merchant Fulfillment Network. Result: Amazon found liable to pay tax. Contact: John Hoefer, Esq., Willoughby & Hoefer, P.A., 940 Richland St., P.O. Box 8416, Columbia, SC 29202-8416. (D)

263. *Supercell Oy v. Gree, Inc.*, PGR2019-00018, Patent Trial and Appeal Board. Served as an expert for patent owner in a post-grant review of U.S. Patent 9,891,799, relating to a method for moving a plurality of objects in a computer game. All claims found unpatentable under 35 U.S.C. § 101. Affirmed by the Federal Circuit. Contact: Scott McKeown, Esq., Ropes & Gray, L.L.P., 2099 Pennsylvania Avenue, Washington, DC 20006-6807. (D,R)

264. *Beal v. Outfield Brew House, LLC.*, Case 2:18-cv-4028 (W.D. Missouri). Served as an expert for plaintiff, representative of a putative class, in a case alleging violation of the

Telephone Consumer Protection Act, 47 U.S.C. § 227, specifically on the issue whether certain dialing systems constitute an "Automatic Telephone Dialing System" under the statute. The District Court ruled for defendant on summary judgment based on statutory interpretation, now on appeal to the Eighth Circuit. Contact: Bill Kenney, Esq., Bill Kenney Law Firm, LLC., 1100 Main St. Suite 1800, Kansas City, MO 64105. (D,R)

265. *Smartmatic USA Corporation v. Election Systems & Software, LLC,* IPR2019-00531, Patent Trial and Appeal Board. Served as an expert for patent owner in an inter partes review of U.S. Patent 8,096,471, relating to a ballot marking device having an attached ballot box and IPR2019-00527 of U.S. Patent 7,753,273. All '471 claims found patentable. Four '273 claims found patentable. Contact: Robert M. Evans, Jr., Esq., Lewis Rice LLC, 600 Washington Avenue, Suite 2500, St. Louis, MO 63101. (D,R)

266. *Curling et al. v. Raffensperger et al.,* Case 1:17-CV-2989AT (N.D. Georgia). Served as an expert for defendants Secretary of State and State Election Board in a case in which plaintiffs seek an injunction of forbid use of DRE voting machines in Georgia in 2019. Preliminary injunction denied as to the November 2019 election. Contact: Vincent Russo, Esq., Robbins Ross Alloy Belinfante Littlefield LLC, 500 14th Street N.W., Atlanta, GA 30318. (D,R)

267. *Smith v. Truman Road Development, LLC d/b/a No OtherPub,* Case 4:18-cv-670-NKL (W.D. Missouri). Served as an expert for plaintiff, representative of a putative class, in a case alleging violation of the Telephone Consumer Protection Act, 47 U.S.C. § 227, specifically on the issue whether certain dialing systems constitute an "Automatic Telephone Dialing System" under the statute. The District Court ruled for defendant on summary judgment based on statutory interpretation. Contact: Bill Kenney, Esq., Bill Kenney Law Firm, LLC., 1100 Main St. Suite 1800, Kansas City, MO 64105. (R)

268. *J. T. Hand et al. v. Beach Entertainment, LLC d/b/a Shark Bar,* Case 4:18-cv-668-NKL (W.D. Missouri). Served as an expert for plaintiff, representative of a putative class, in a case alleging violation of the Telephone Consumer Protection Act, 47 U.S.C. § 227, specifically on the issue whether certain dialing systems constitute an "Automatic Telephone Dialing System" under the statute. Partial summary judgment was granted, now on appeal to the Eighth Circuit. Contact: Bill Kenney, Esq., Bill Kenney Law Firm, LLC., 1100 Main St. Suite 1800, Kansas City, MO 64105. (R)

269. *WhereverTV, Inc. v. Comcast Corporation, et al.,* Case 2:18-cv-00529-UA-CM (M.D. Florida). Served as an expert for plaintiff in a case alleging infringement of U.S. Patent 8,656,431, relating to a system for integrating television and IPTV channels into a global interactive program guide. Contact: Adam Sanderson, Esq., Reese Marketos LLP, 750 N. St. Paul St., Suite 600, Dallas, TX 75201. (R)

270. *Droplets, Inc. v. Nordstrom, Inc.*, Case 3:12-CV-04049-JST (N.D. Cal.). Served as an expert for defendant in an action alleging infringement of U.S. Patent 8,402,115, relating to delivering interactive links for presenting applications on a client computer. Case has settled.

Contact: Benjamin Kleinman, Esq., Kilpatrick Townsend & Stockton LLP, Two Embarcadero Center Suite 1900, San Francisco, CA 94111. (D,R)

271. *Droplets, Inc. v. Yahoo!, Inc.*, Case 3:12-CV-03733-JST (N.D. Cal.). Served as an expert for defendant in an action alleging infringement of U.S. Patent 8,402,115, relating to delivering interactive links for presenting applications on a client computer. At trial, Plaintiff sought $250 million, was awarded $15 million. Contact: Kevin P. Anderson. Esq., Duane Morris LLP, 505 9th Street, N.W., Suite 1000, Washington, DC 20004-2166. (D,R,T)

272. *Square, Inc. v. 4361423 Canada, Inc. d/b/a AnywhereCommerce*, IPR2019-01651, IPR2019-01652, IPR2019-01653, and IPR2019-001654, Patent Trial and Appeal Board. Served as an expert for petitioner in inter-partes reviews of U.S. Patents 9,443,239, 9,613,351, and 9,818,107, relating to an attachment to a cellphone to facilitate credit card transactions. Result: all challenged claims umpatentable in all four IPRs. Contact: David Tennant, Esq., White & Case, L.L.P., 701 Thirteenth Street, NW, Washington, DC 20005. (R)

273. *Uniloc 2017 LLC. v. Netflix, Inc. et al.*, Lead Consolidated Case SACV8:18-cv-2055-GW-DFMx (C.D. Cal.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patents 8,407,609, relating to tracking the amount of time a presentation is watched online, and 9,721,273, relating to aggregating and presenting audio and video over a network. Case has settled. Contact: Sal Lim, Esq., Feinberg Day Kramer Alberti Lim Tonkovich & Belloli LLP, 1600 El Camino Real, Suite 280, Menlo Park, CA 94025. (R)

274. Comcast Cable Communications, LLC v. WhereverTV, Inc., IPR2019-01482, and IPR2019-001483, Patent Trial and Appeal Board. Served as an expert for Patent Owner in inter-partes reviews of U.S. Patent 8,656,431, relating to a system for integrating television and IPTV channels into a global interactive program guide. Institution denied in both cases. Contact: Adam Sanderson, Esq., Reese Marketos LLP, 750 N. St. Paul St., Suite 600, Dallas, TX 75201. (R)

275. Boom! Payments, Inc. v. Stripe, Inc. et al., Case 3:19-cv-0050-VC (N.D. Cal.). Served as an expert for Defendants Shopify, Inc. and Shopify (USA) Inc. in an action alleging infringement of U.S. Patents 8,429,084, and 9,235,857, relating to a system for confirming that a physical exchange of goods has occurred in an online transaction. All asserted claims found invalid under 35 U.S.C. § 101 upon Defendants' motion to dismiss. Contact: Vincent M. Ferraro, Esq., Mintz, Levin, Cohn, Ferris, Glovsky and Popeo P.C., Chrysler Center, 666 Third Avenue, New York, NY 10017.

276. Curb Mobility, LLC. v. Kaptyn, Inc. et al., Case 2:18-cv-02416-MMD-GWF (D. Nev.). Served as an expert for Defendants in an action alleging infringement of U.S. Patent 6,347,739, relating to a system for accepting credit cards in taxicabs. All asserted claims found invalid under 35 U.S.C. § 101. Contact: Robert Yorio, Esq., Carr & Ferrell LLP, 120 Constitution Drive, Menlo Park, CA 94025. (R)

277. Canon, Inc. v. TCL Electronics Holdings, Ltd., et al., Case 2:18-cv-00546-JRG (E.D. Texas). Served as an expert for Plaintiff in an action alleging infringement of U.S. Patent

7,810,130, relating to buffering video content, U.S. Patent 7,746,413, relating to interpreting instructions from a television remote control, and U.S. Patents 8,078,767, 8,346,986 and 8,713,206, relating to controlling a digital display when an external device has been disconnected. Case has settled. Contact: Kyotaro Ozawa, Esq., Paul Hastings LLC, Ark Hills Sengokuyama Mori Tower, Fortieth Floor 1-9-10 Roppongi, Minato-ku, Tokyo 106-0032 Japan. (D,R)

278. *Uniloc 2017 LLC v. Paychex, Inc.*, Case No. 1:19-cv-11272-RGS (D. Mass.), consolidated for certain purposes with *Uniloc 2017 LLC v. AthenaHealth Inc.*, Case No. 1:19-cv-11278-RGS (D. Mass.). Served as an expert for plaintiff in actions alleging infringement of U.S. Patent 6,324,578, relating to management of configurable application programs on a network. Paychex case dismissed for lack of jurisdiction. Cases have settled. Contact: James J. Foster, Esq., Prince Lobel Tye LLP, One International Place, Suite 3700, Boston, MA 02110. (D,R)

279. *H2O Resources, LLC v. Oilfield Tracking Services, LLC,* AAA Case No. 01-18-0003 6309 (Houston, Texas). Served as an expert for defendants in an arbitration alleging misappropriation of trade secrets under 18 U.S.C. § 1836 and 12 P.S. § 5301 (Pennsylvania) relating to a system for tracking movement of produced water generated from oil and gas drilling. Matter has settled. Contact: Paul Greco, Esq., Fisher Philips LLP, 150 N. Radnor Chester Road, Suite C300, Radnor, PA 19087. (D,R)

280. *J.T. Hand et al. v. ARB KC, LLC d/b/a Angels Rocks Bar,* Case 4:19-cv-108-BCW (W.D. Missouri). Served as an expert for plaintiff, representative of a putative class, in a case alleging violation of the Telephone Consumer Protection Act, 47 U.S.C. § 227, specifically on the issue whether certain dialing systems constitute an "Automatic Telephone Dialing System" under the statute. Contact: Bill Kenney, Esq., Bill Kenney Law Firm, LLC., 1100 Main St. Suite 1800, Kansas City, MO 64105. (R)

281. *Doohan et al. v. CTB Investors, LLC d/b/a PBR Big Sky Cowboy Bar et al.*, Case 4:19-cv-111-FJG (W.D. Missouri). Served as an expert for plaintiff, representative of a putative class, in a case alleging violation of the Telephone Consumer Protection Act, 47 U.S.C. § 227, specifically on the issue whether certain dialing systems constitute an "Automatic Telephone Dialing System" under the statute. Contact: Bill Kenney, Esq., Bill Kenney Law Firm, LLC., 1100 Main St. Suite 1800, Kansas City, MO 64105. (R)

282. *Taylor et al. v. KC Vin, LLC d/b/a/ Pizza Bar, et al.*, Case 4:19-cv-110-NKL (W.D. Missouri). Served as an expert for plaintiff, representative of a putative class, in a case alleging violation of the Telephone Consumer Protection Act, 47 U.S.C. § 227, specifically on the issue whether certain dialing systems constitute an "Automatic Telephone Dialing System" under the statute. Contact: Bill Kenney, Esq., Bill Kenney Law Firm, LLC., 1100 Main St. Suite 1800, Kansas City, MO 64105. (R)

283. *The Thomas L. Pearson and The Pearson Family Members Foundation, et al. v. The University of Chicago,* Case 4:18-cv-00099-GKF-FHM (N.D. Oklahoma). Serving as an expert for plaintiffs in an action alleging breach of an agreement granting $100 million to the

University of Chicago. Contact: Isaac Ellis, Esq., Conner & Winters, LLP, 4000 One Williams Center, Tulsa, OK 74172-0148. (D,R)

284. *ESW Holdings, Inc. v. Roku, Inc.*, Case 6:19-cv-00044-ADA (W.D. Texas). Served as an expert for Plaintiff in an action alleging infringement of U.S. Patent 9,420,349, relating to monitoring a digital media stream and identifying media objects through fingerprinting. Jury verdict for defendent. Contact: Conor Civins, Esq., Bracewell LLP, 111 Congress Avenue, Suite 2300, Austin, TX 78701-4061 (D,R,T)

285. *Apple, Inc. v. Fintiv, Inc.*, IPR2020-00019, Patent Trial and Appeal Board. Serving as an expert for Patent Owner in an inter-partes review of U.S. Patent 8,843,125, relating to a system and method for managing a mobile wallet through a Trusted Service Manager (TSM). Institution denied. Contact: Marcus Barber, Esq., Kasowitz Benson Torres LLP, 333 Twin Dolphin Drive, Suite 200, Redwood Shores, CA 94065. (D, R)

286. *Election Systems & Software, LLC v. Hart InterCivic, Inc.*, PGR2020-00031, Patent Trial and Appeal Board. Served as an expert for petitioner in a post-grant review of U.S. Patent 10,445,966, relating to conversion of printed ballots into cast vote records by optical character recognition. Result: all challenged claims unpatentable. Federal Circuit appeal was dismissed by Patent Owner. Contact: Robert M. Evans, Jr., Esq., Lewis Rice LLC, 600 Washington Avenue, Suite 2500, St. Louis, MO 63101. (D,R)

287. *Launius v. Flores, in her official capacity as Presiding Officer, Chair of Trustees, of Dallas County Community College District*, Cause DC-19-08429 (Dist. Ct., Dallas Cty., Texas). Served as an expert for contestee in an action alleging that an election held May 4, 2019 approving a $1 billion bond issue should be overturned because "the true outcome of the election cannot be ascertained." After a bench trial, the Court granted judgment in favor of contestee. Affirdmed by the Court of Appeals. The Texas Supreme Court declined review. Contact: Adam Rothey, Esq., Thompson & Horton LLP, 500 N. Akard St., Suite 3150, Dallas, TX 75201. (D,T)

288. *Slyce Acquisition, Inc. v. Syte - Visual Conception Ltd. et al.*, Case 6:19-cv-00257-ADA (W.D. Texas). Served as an expert for Plaintiff in an action alleging infringement of U.S. Patent 9,152,624, relating to navigating Web content via image analysis. Case has settled. Contact: Michael Chibib, Esq., Bracewell LLP, 111 Congress Avenue, Suite 2300, Austin, TX 78701-4061 (R)

289. *Early Warning Services, LLC v. William Grecia*, IPR2020-00763, Patent Trial and Appeal Board. Served as an expert for petitioner in an inter partes review of U.S. Patent 8,887,308, relating to generation of tokens authenticating users seeking access to digital cloud content. Review was not instituted, but the patent was found invalid on § 101 grounds in litigation. Contact: Cory Smith, Esq., Bryan Cave Leighton Paisner LLP, Two North Central Avenue, Suite 2100, Phoenix, AZ 85004-4406. (R)

290. *Supercell Oy v. Gree, Inc.*, PGR2020-00063, Patent Trial and Appeal Board. Served as an expert for patent owner in a post-grant review of U.S. Patent 10,406,432, relating to a method for providing information in a head-mounted display based on gaze sensing. Institution

denied. Contact: Scott McKeown, Esq., Ropes & Gray, L.L.P., 2099 Pennsylvania Avenue, Washington, DC 20006-6807. (R)

291. *Digital Retail Apps, Inc. v. H-E-B Grocery Company, LP*, Case 6:19-cv-00167-ADA (W.D. Texas). Served as an expert for defendant in an action alleging infringement of U.S. Patents 9,262,781, and 9,934,506, relating to use of QR codes in point-of-sale electronic payment applications. Case settled before trial. Contact: Andrew Klein, Esq., Perkins Coie LLP, 3150 Porter Drive, Palo Alto, CA 94304-1212. (D,R)

292. *HLFIP Holding, Inc. d/b/a/ Smart Communications IP Holdings v. Rutherford County, Tennessee et al.*, Case 3:19-cv-00714 (M.D. Tenn.). Served as an expert for intervenor VendEngine, Inc. in an action alleging infringement of U.S. Patent 10,291,167, relating to a computerized method of eliminating contraband in mail directed to correctional facilities. Defendant and intervenor prevailed on judgment on the pleadings that the patent was ineligible under 35 U.S.C. § 101. Contact: W. Edward Ramage, Esq., Baker Donelson, Bearman, Caldwell & Berkowitz, P.C., Monarch Plaza, Suite 1600, 3414 Peachtree Road N.E., Atlanta, GA 30326. (D,R)

294. *Broadband iTV, Inc. v. DISH Network, L.L.C.*, Case 6:19-cv-716-ADA (W.D. Texas). Served as an expert for Plaintiff in an action alleging infringement of U.S. Patents 9,648,388, 9,998,791, 10,023,026 and 10,506.269, relating to hierarchical navigation of video-on-demand television menus. Case has settled. Contact: Sal Lim, Esq., Kramer Day Alberti Lim Tonkovich & Belloli LLP, 577 Airport Boulevard, Suite 250, Burlingame, California 94010. (D,R)

295. *Arendi S.A.R.L. v. Blackberry Limited et al.*, Case 1:12-cv-01595-LPS (D. Del.). Serving as an expert for Defendant in an action alleging infringement of U.S. Patents 7,917,843 and 8,306,993, relating to a touchscreen mechanism for providing name and address handling by an associated information system. Contact: Jason W. Cook, Esq., McGuireWoods LLP, 2000 McKinney Ave., Suite 1400, Dallas, TX 75201. (D,R)

296. *Unified Patents, LLC v. Monarch Networking Solutions LLC*, IPR2020-01708, Patent Trial and Appeal Board. Served as an expert for petitioner in an inter partes review of U.S. Patent 7,756,507, relating to out-of-band authentication to obtain access to a digital network. All challenged claims found unpatentable. Contact: John M. Baird, Esq., Duane Morris LLP, 505 9th Street, N.W., Suite 1000, Washington, DC 20004-2166. (R)

297. *Aqua Connect, Inc. et al. v. TeamViewer U.S. Inc. et al.*, Case 1:18-cv-01572-MN (D. Del.). Served as an expert for Plaintiffs in an action alleging infringement of U.S. Patents RE46,386 and 8,924,502, relating to updating a user session in a Mach-derived system environment. At trial, the jury awarded Plaintiffs $5.7 million, before prejudgment interest. Contact: Ryan E. Hatch, Esq., Hatch Law, P.C., 13323 Washington Blvd., Suite 100, Los Angeles, CA 90066. (D,R,T)

298. *PayPal, Inc. v. RetailMeNot, Inc.*, Case 6:20-cv-00339-ADA (W.D. Texas). Served as an expert for PayPal in an action alleging infringement by RetailMeNot of U.S. Patents 6,917,961 and 7,693,937, relating to evolving interactive browser dialog boxes, U.S. Patent 7,659,905,

relating to pre-fetching data on a network, U.S. Patents 8,909,248 and 9,654,932, relating to provision of location-based services, and U.S. Patents 9,053,514 and 9,082,153, relating to automatic rebate and coupon redemption, and alleging in counterclaims infringement by PayPal of U.S. Patents 10,296,931, and 10,489,814, relating to accessing promotional offers displayed on websites by circumventing secure sandbox protections. Case has settled. Contact: Steve Marshall, Esq., Fish & Richardson, P.C., 1000 Maine Avenue, S.W., Suite 1000, Washington, DC 20024.

299. *Rovi Guides, Inc. et al. v. Comcast Corporation et al.*, Case No. 2:18-cv-00253-AG-FFM (C.D. Cal.). Served as an expert for plaintiffs in an action alleging infringement of U.S. Patents 7,827,585, relating to electronic TV program guides, 9,294,799, relating to an on-demand media delivery system, 9,369,741, relating to an interactive television reminder system, 9,578,363, relating to accessing video content via standard and high-definition channels, 9,621,956, relating to a television transport control interface, and 9,668,014, relating to methods for storing video assets. Case has settled. Contact: Richard A. Kamprath, Esq., McKool Smith, 300 Crescent Court, Suite 1500, Dallas, TX 75201.

300. *RetailMeNot, Inc. v. Honey Science, LLC*, Case 1:18-cv-00937-CFC-MPT (D. Del.). Served as an expert for defendant in an action alleging infringement of U.S. Patents 9,626,688, 10,290,015, 10,296,931, and 10,489,814, relating to accessing promotional offers displayed on websites by circumventing secure sandbox protections. Case has settled. Contact: Richard Birnholz, Esq., Irell & Manella LLP, 1800 Avenue of the Stars, Suite 900, Los Angeles, CA 90067-4276.

301. *Certain Video Processing Devices, Components Thereof, and Digital Smart Televisions Containing the Same*, USITC Inv. No. 337-TA-1222. Served as an expert for Complainant DivX, LLC against numerous smart television manufacturers in an International Trade Commission proceeding involving alleged infringement of, *inter alia*, U.S. Patent 8,832,297, relating to multiphase adaptive bitrate streaming. Case has settled. Contact: Jessica Perry, Esq., Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., One Financial Center, Boston, MA 02111.

302. *Google LLC v. Sonos, Inc.*, Case No. 3:20-cv-03845-EMC (N.D. Cal.). Serving as an expert for Google in an action alleging infringement of U.S. Patent 7,065,206, relating to echo and noise control, 7,899,187, relating to digital rights management, 8,583,489, relating to notification of availability of media content, 10,140,375, relating to personalized network searching, and 10,229,586, relating to communication via wireless sensor systems. Contact: Patrick D. Curran Esq., Quinn Emanuel Urquhart & Sullivan LLP, 111 Huntington Avenue, Suite 520, Boston, MA 02199. (R)

303. *Hitel Technologies LLC v. Nike, Inc.*, Case 6:20-cv-00591-ADA (W.D. Texas). Served as an expert for Nike in an action alleging infringement of U.S. Patent 7,689,617, relating to adaptive learning during Web navigation. Case was dropped by plaintiff during claim construction. Contact: Christopher Renk, Esq., Arnold & Porter Kaye Scholer LLP, 70 West Madison Street, Suite 4200, Chicago, IL 60602-4231.

304. *Hitel Technologies LLC v. Levi Strauss & Co.*, Case 6:20-cv-00589-ADA (W.D. Texas). Served as an expert for Levi Strauss in an action alleging infringement of U.S. Patent 7,689,617, relating to adaptive learning during Web navigation. Case was dropped by plaintiff during claim construction. Contact: Robert A. McFarlane, Esq., Hanson Bridgett LLP, 425 Market Street, 26th Floor, San Francisco, CA 94105.

305. *Unified Patents, LLC v. Caselas, LLC,* IPR2021-00799, Patent Trial and Appeal Board. Served as an expert for petitioner in an inter partes review of U.S. Patent 9,716,691, relating to providing information about charge-backs in credit reports. Result: all challenged claims found unpatentable. See Final Written Decision. Contact: Larissa Bifano, Esq., DLA Piper LLP, 33 Arch Street, 26th Floor, Boston, MA 02110-1447. (D,R)

306. *Fortinet, Inc. v. Forescout Technologies, Inc.*, Case 3:20-cv-03343-EMC-ADA (N.D. Cal.). Serving as an expert for plaintiff in an action alleging infringement of U.S. Patents 8,458,314, relating to administration of network security privileges, 9,369,299, relating to methods for controlling remote network access, 9,503,421, relating to security information and event management, 9,894,034, relating to configuration of network endpoint security, and 9,948,662, relating to application layer network security. Contact: Rachel Blitzer, Esq., Skadden, Arps, Slate, Meagher & Flom LLP, One Manhattan West, New York, NY 10001. (R)

307. *Delaware North iGaming, Inc. v. Miomni Gaming Ltd. et al.*, C.A. 2019-0301-JTL (Del. Ch.). Served as a court-appointed expert in a matter alleging breach of contract to provide software and computing services. Case has settled. Contact: Vice-Chancellor J. Travis Laster, Court of Chancery, 500 North King Street, Wilmington, DE 19801.

308. *Zillow Group et al. v. International Business Machines Corp.*, IPR2020-01656, Patent Trial and Appeal Board. Served as an expert for patent owner in an *inter partes* review of U.S. Patent 8,315,904, relating to a computerized method for managing promotions. Review was instituted, but all Challenged Claims were found patentable. Contact: Gautam Patnaik, Esq., Desmarais, LLP, 1701 Pennsylvania Avenue NW, Suite 200, Washington, D.C. 20006. (D,R)

309. *ByteDance Ltd. and TikTok Inc. v. Triller, Inc.*, IPR2021-00099, Patent Trial and Appeal Board. Served as an expert for patent owner in an *inter partes* review of U.S. Patent 9,691,429, relating to systems and methods for creating music videos synchronized with an audio track. Case has settled. Contact: Brent Lorimer, Esq., Workman Nydegger, 60 East South Temple, Suite 1000, Salt Lake City, UT 84111. (D,R)

310. *Broadband iTV, Inc. v. Amazon.Com, Inc. et al.*, Case 6:20-cv-921-ADA (W.D. Texas). Served as an expert for Plaintiff in an action alleging infringement of U.S. Patents 9,648,388, 9,973,826, 10,023,026, 10,506,269, 10,536,750 and 10,536,751, relating to hierarchical navigation of video-on-demand television menus. Asserted claims found invalid as non-statutory. Now on appeal to the Federal Circuit. Contact: Sal Lim, Esq., Kramer Day Alberti Lim Tonkovich & Belloli LLP, 577 Airport Boulevard, Suite 250, Burlingame, California 94010. (D,R)

311. *DISH Network, L.L.C, v. Broadband iTV, Inc.*, IPR2020-01267, Patent Trial and Appeal Board. Served as an expert for patent owner in in an *inter partes* review of U.S. Patent

10,023,026, relating to hierarchical navigation of video-on-demand television menus. Case has settled. Contact: Sal Lim, Esq., Kramer Day Alberti Lim Tonkovich & Belloli LLP, 577 Airport Boulevard, Suite 250, Burlingame, California 94010. (D,R)

312. *DISH Network, L.L.C, v. Broadband iTV, Inc.*, IPR2020-01280, Patent Trial and Appeal Board. Served as an expert for patent owner in in an *inter partes* review of U.S. Patent 9,998,791, relating to hierarchical navigation of video-on-demand television menus. Case has settled. Contact: Sal Lim, Esq., Kramer Day Alberti Lim Tonkovich & Belloli LLP, 577 Airport Boulevard, Suite 250, Burlingame, California 94010. (D,R)

313. *DISH Network, L.L.C, v. Broadband iTV, Inc.*, IPR2020-01359, Patent Trial and Appeal Board. Served as an expert for patent owner in in an *inter partes* review of U.S. Patent 9,648,388, relating to hierarchical navigation of video-on-demand television menus. Case has settled. Contact: Sal Lim, Esq., Kramer Day Alberti Lim Tonkovich & Belloli LLP, 577 Airport Boulevard, Suite 250, Burlingame, California 94010. (D,R)

314. *Justservice.net, LLC. v. Dropbox, Inc.*, Case 6:20-cv-00070-ADA (W.D. Texas). Served as an expert for Defendants in an action alleging infringement of U.S. Patents 8,126,990, 8,195,776, 8,392,542, 9,772,993, 10,387,270 and 10,472,868, relating to network-based file backup systems. Case has settled. Contact: Monica Grewal, Esq., Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, MA 02109.

315. *Dropbox, Inc. v. Motion Offense, LLP*, Case 6:20-cv-00251-ADA (W.D. Texas). Served as an expert for declaratory judgment plaintiff Dropbox in an action relating to alleged infringement of U.S. Patents 10,013,158, 10,021,052, 10,303,353, 10,587,548, and 10,613,737, relating to file-sharing systems. At trial, all asserted claims were found not infringed, not entitled to priority to 2012, and were found invalid. Contact: Monica Grewal, Esq., Wilmer Cutler Pickering Hale and Dorr LLP, 60 State Street, Boston, MA 02109. (D,R,T)

316. *HealthPlanCRM, LLC d/b/a Cavulus v. AvMed, Inc. et al.*, Case 01-19-0002-2557 (American Arbitration Association). Served as an expert for respondents in an arbitration alleging misappropriation of trade secrets concerning a customer relationship management (CRM) platform relating to Medicare Advantage Plans. Result: all claims dismissed by arbitrator. Contact: Chris Schwing, Esq., Holland & Knight LLP, 50 N. Laura Street, Suite 3900, Jacksonville, FL 32202. (R)

317. *Talavera et al. v. Global Payments, Inc. et al.*, Case 3:21-cv-1585-TWR-AGS (S.D. Cal.). Served as an expert for defendants in an action alleging infringement of copyright in a computer program that operates storefronts for online purchase of school supplies. Contact: Matthew D. Murphey, Esq., Murphey & Murphey, 120 Vantis Drive, Suite 300, Aliso Viejo, California 92656. (R)

318. *AlphaSense Oy et al. v. Sentieo, Inc.*, Case 1:21-cv-01011-CFC/JLH-MPT (D. Del.). Served as an expert for defendant in a case alleging infringement of U.S. Patent 11,023,675, relating to a user interface for a financial document search engine. Case has settled. Contact: Jennifer Ying,

Esq., Morris, Nichols, Arsht & Tunnell, LLP, 1201 North Market Street, 16th Floor, Wilmington, DE 19899-1347. (R)

319. *Triller, Inc. v. TikTok PTE, Ltd.*, IPR2022-00179, IPR2021-00180, and IPR2021-00181, Patent Trial and Appeal Board. Served as an expert for petitioner in *inter partes* reviews of U.S. Patents 9,294,430, 9,648,132, and 9,992,232, relating to systems and methods for locating and downloading digital music to a wireless device. Review was instituted in 2022-00179 and 2022-00180; denied in 2022-00181. Case has settled. Contact: Brent Lorimer, Esq., Workman Nydegger, 60 East South Temple, Suites 1000, Salt Lake City, UT 84111. (D,R)

320. *RFCyber Corp. v. Google LLC and Google Payment Corp.*, C.A. 2:20-cv-00274-JRG (E.D. Texas). Served as an expert for Google in an action alleging infringement of U.S. Patents 6,292,657, 8,118,218, 8,448,855, 9,187,7877, 9,240,009, and 10,600,046, relating to electronic commerce payment methods. Case has settled. Contact: Heather Takahashi, Esq., Munger, Tolles & Olson LLP, 355 South Grand Avenue, Los Angeles, CA 90071.

321. *KioSoft Technologies, LLC et al. v. PayRange, Inc.*, PGR2021-00077, Patent Trial and Appeal Board. Served as an expert for patent owner in a post-grant review of U.S. Patent 10,719,833, relating to methods for authorizing payments wirelessly at vending machines. Result: claim 1 unpatentable; claims 2-27 not unpatentable. Contact: Matthew Argenti, Esq., Wilson Sonsini Goodrich & Rosati, 650 Page Mill Road, Palo Alto, CA 94304. (D,R)

322. *Fintiv, Inc. v. Apple, Inc.* C.A. 1:21-cv-00896-ADA (W.D. Texas). Serving as an expert for plaintiff in an action alleging infringement of U.S. Patent 8,843,125, relating to a system and method for managing a mobile wallet through a Trusted Service Manager (TSM). Contact: Marcus Barber, Esq., Kasowitz Benson Torres LLP, 333 Twin Dolphin Drive, Suite 200, Redwood Shores, CA 94065. (D,R)

323. *NRT Technology Corp. et al. v. Everi Holdings Inc. et al.*, C.A. 1:19-cv-00804-MN (D. Del.). Serving as an expert for Plaintiffs in an action alleging misuse of U.S. Patent 6,081,792, relating to structuring ATM and POS transactions with respect to withdrawal limits. Contact: Colby B. Springer, Esq., Polsinelli LLP (formerly at Lewis Roca Rothgerber LLP), Three Embarcadero Center, Suite 1350, San Francisco, CA 94111. (D,R)

324. *KioSoft Technologies, LLC et al. v. PayRange, Inc.*, PGR2021-00093, Patent Trial and Appeal Board. Served as an expert for patent owner in a post-grant review of U.S. Patent 10,891,614, relating to methods for authorizing payments wirelessly at vending machines. Claims 7, 11-13, 16 and 17 found not unpatentable. Contact: Matthew Argenti, Esq., Wilson Sonsini Goodrich & Rosati, 650 Page Mill Road, Palo Alto, CA 94304. (D,R)

325. *OANDA Corporation v. GAIN Capital Holdings Inc. et al.*, C.A. 3:20-cv-05784-ZNQ-DEA (D. N.J.). Serving as an expert for Plaintiff in an action alleging infringement of U.S. Patents 7,146,336 and 8,392,311, relating to systems and methods of online currency trading. Contact: Drew Koning, Esq., Koning Zolar LLP 169 Saxony Road, Suite 115, Encitas, CA 92024-6780. (R)

326. *AnywhereCommerce, Inc. et al. v. Ingenico, Inc. et al.*, C.A. 1:19-cv-11457-IT (D. Mass.). Serving as an expert for Defendants in an action alleging infringement misappropriation of trade secrets involving card reading devices connecting to cellphones via audio jack. Contact: Jeffrey Techentin, Esq., Adler Pollock & Sheehan P.C., One Citizens Plaza, 8th Floor, Providence, RI 02903-1345. (D,R)

327. *Samsung Electronics Co. Ltd. v. Aire Technology Ltd*,, IPR2022-00875, Patent Trial and Appeal Board. Served as an expert for petitioner in an *inter partes* review of U.S. Patent 8,205,249, relating to a method for carrying out a secure electronic transaction. Terminated by settlement prior to institution. Contact: Daniel Tishman, Esq., Fish & Richardson, P.C., 1000 Maine Avenue, S.W., Suite 1000, Washington, DC 20024. (R)

328. *Content Square SAS v. Quantum Metric, Inc.*, IPR2022-01167, Patent Trial and Appeal Board. Served as an expert for petitioner in an *inter partes* review of U.S. Patent 11,036,823, relating to a method for capturing and replaying user interactions with a webpage through a Document Object Model (DOM) tree. Terminated by settlement. Contact: Stephen R. Smith, Esq., Cooley LLP, 1299 Pennsylvania Avenue, NW, Suite 700, Washington, DC 20004-2400. (R)

329. *Open Text Corporation et al. v. SAS C6*, C.A. 2084-cv-02578-BLS1 (Mass. Super.). Served as an expert for Defendant in an action alleging breach of a software license agreement and misappropriation of trade secrets involving enterprise content management systems. Case has settled. Contact: Matthew C. Hurley, Esq., Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., One Financial Center, Boston, MA 02111. (R)

330. *ABG Intermediate Holdings 2, LLC at al. v. Bolt Financial, Inc.*, C.A. 22-cv-00473-IT (S.D. N.Y.). Served as an expert for Plaintiff in a case alleging breach of contract for development of an ecommerce software platform and misuse of proprietary information. Case has settled. Contact: Bill Natbony, Esq., Cadwalader, Wickersham & Taft LLP, 200 Liberty Street, New York, NY 10281.

331. *In the Matter of Certain Digital Set-Top Boxes and Systems and Services Including the Same*, USITC Inv. No. 337-TA-1315. Served as an expert for Complainant Broadband iTV, Inc. in an ITC proceeding alleging infringement of U.S. Patents 9,866,909, 9,936,240, 10,555,014, and 11,277,699, relating to hierarchical navigation of video-on-demand television menus. Case has settled. Contact: Sal Lim, Esq., Kramer Day Alberti Lim Tonkovich & Belloli LLP, 577 Airport Boulevard, Suite 250, Burlingame, California 94010. (R)

332. *Proofpoint, Inc. et al. v. Vade Secure Incorporated et al.*, Case 3:19-cv-04238-MMC (N.D. Cal.). Served as an expert for plaintiffs in an action alleging misappropriation of trade secrets and breach of employment and confidentiality agreements relating to cybersecurity technology. Result: jury verdict for plaintiffs for $13.9 million. Contact: Sean Pak, Esq., Quinn Emanuel Urquhart & Sullivan, LLP, 50 California Street, 22nd Floor San Francisco, California 94111.

333. *Apple, Inc. v. Fintiv, Inc.*, IPR2022-00976, Patent Trial and Appeal Board. Serving as an expert for Patent Owner in an inter-partes review of U.S. Patent 9,892,386, relating to a mobile

financial services system for making payments using mobile wallets. Contact: Marcus Barber, Esq., Kasowitz Benson Torres LLP, 333 Twin Dolphin Drive, Suite 200, Redwood Shores, CA 94065. (D,R)

334. *BJ's Wholesale Club Holdings, Inc. v. Walmart Apollo, LLC.*, IPR2022-01471, Patent Trial and Appeal Board. Serving as an expert for Petitioner in an inter-partes review of U.S. Patent 10,121,133, relating to a method for retail self-checkout using a mobile device. Contact: Michael Messinger, Esq., Vorys, Sater, Seymour and Pease LLP, 1909 K Street NW, Suite 900, Washington, DC 20006-1152. (R)

335. *KioSoft Technologies, LLC et al. v. PayRange, Inc.*, PGR2021-00084, Patent Trial and Appeal Board. Served as an expert for patent owner in a post-grant review of U.S. Patent 10,891,608, relating to methods for authorizing payments wirelessly at vending machines. Review was not instituted. Contact: Matthew Argenti, Esq., Wilson Sonsini Goodrich & Rosati, 650 Page Mill Road, Palo Alto, CA 94304.

336. *Versata Software, Inc., et al.. v. Configit A/S,* Case 2:20-cv-09019-JAK-MRW (C.D. Cal.). Served as an expert for Plaintiff in an action alleging trade secret misappropriation and infringement of U.S. Patents 6,836,766 and 10,360,612, relating to product configuration systems. Case has settled. Contact: Michael Chibib, Esq., Bracewell LLP, 111 Congress Avenue, Suite 2300, Austin, TX 78701-4061 (R)

337. *Apple, Inc. v. Modizo-Corfire-Korea, Ltd.*, IPR2022-01149, Patent Trial and Appeal Board. Serving as an expert for real party in interest Fintiv, Inc. in an inter-partes review of U.S. Patent 10,223,692, relating to a method for establishing a temporary payment cards on a mobile device. Contact: Marcus Barber, Esq., Kasowitz Benson Torres LLP, 333 Twin Dolphin Drive, Suite 200, Redwood Shores, CA 94065. (R)

338. *Apple, Inc. v. Modizo, Inc.*, IPR2022-01150, Patent Trial and Appeal Board. Serving as an expert for real party in interest Fintiv, Inc. in an inter-partes review of U.S. Patent 9,189,785, relating to a method for selecting a debit network using a scannable code. Contact: Marcus Barber, Esq., Kasowitz Benson Torres LLP, 333 Twin Dolphin Drive, Suite 200, Redwood Shores, CA 94065. (R)

339. *In re Xyrem (Sodium Oxybate) Antitrust Litigation,* Case 5:20-md-02966-RS (N.D. Cal.). Deposed as a fact witnesss concerning expert reports submitted in case 149, *Jazz Pharmaceuticals, Inc. v. Roxane Laboratories, Inc.*, regarding methods for controlling the distrinution of sensitive drugs. Contact: Jack E. Pace III, Esq., White & Case LLP, 1221 Avenue of the Americas, New York, NY 10020 (D)

340. *Roku, Inc. v. IOENGINE, LLC,* IPR2022-01257, IPR2022-01258, Patent Trial and Appeal Board. Served as an expert for Patent Owner in inter-partes reviews of U.S. Patent 10,447,819, relating to a secure portable device implementing a plug-n-play VPN. Institution denied in both IPRs. Contact: Greg Chuebon, Esq., Dechert LLP, Three Bryant Park, 1095 Avenue of the Americas, New York, NY 10036-6797. (D,R)

341. *Beijing Meishe Network Technology Co., Ltd. v. TikTok Inc.*, C.A. 6:21-cv-00504-ADA-JCM (W.D. Texas). Serving as an expert for plaintiff in an action alleging copyright infringement and trade secret misappropriation of software for editing video and audio on mobile devices. Contact: Stephanie Wood, Esq., Cherian LLP, 8350 N. Central Expressway, Suite 1900, Dallas, TX 75206.

342. *Ivanti, Inc. v. Patch My PC, LLC*, C.A. 1:22-cv-00643-NYW-SKC (D. Col.). Served as an expert for defendant in an action alleging infringement of U.S. Patents 6,990,660, 7,823,147 and 8,407,687, relating to methods for updating software remotely over a network by using patch fingerprints. On summary judgment, all asserted claims were found paten-ineligible under 35 U.S.C. § 101. Contact: Daniel W. McDonald, Esq.., Merchant & Gould P.C., Suite 220, 150 S. Fifth St., Minneapolis MN 55402. (D,R)

343. *Samsung Electronics, Co. Ltd.. v. Cardware, Inc.*, IPR2023-00196, IPR2023-00210, IPR2023-00211, and IPR2023-00219, Patent Trial and Appeal Board. Serving as an expert for Petitioner in inter-partes reviews of U.S. Patents 10,810,579 (IPR 196), 10,339,520 (IPRs 210, 211), and 11,176,538 (IPR 219), relating to a device for simulating a magnetic-stripe credit card. Contact: Nicholas Stevens, Esq., Fish & Richardson, 60 South Sixth Street, Suite 3200, Minneapolis, MN 55402. (R)

344. *Snap, Inc. v. YouMap, Inc.*, IPR2022-00568, Patent Trial and Appeal Board. Serving as an expert for Patent Owner in an inter-partes review of U.S. Patent 10,616,727, relating to providing location information associated with social network posts. Contact: Richard A. Catalina, Esq., Jardim, Meisner & Susser, P.C., 766 Shrewsbury Ave., Suite E-202, Tinton Falls, NJ 07724. (D,R)

345. *Everi Payments, Inc. v. Sightline Payments LLC*, IPR2022-00614, IPR2022-00663, and, IPR2022-00696, Patent Trial and Appeal Board. Serving as an expert for Patent Owner in inter-partes reviews of U.S. Patents 8,708,809 (IPR 614), 8,998,708 (IPR 663), 9,196,123 (IPR 696), 9,466,176 (IPR 706), and 9,785,926 (IPR 707), relating to systems for funding casino gaming accounts also usable for non-gaming purposes. Contact: James Murphy, Esq., Polsinelli LLP, 1000 Louisiana Street, 64 Fl, Houston, TX 77002. (D,R)

346. *SurgeTech, LLC v. Uber Technologies, Inc.*, C.A. 1:22-cv-00882-GBW-CJB (D. Del.). Serving as an expert for plaintiff in an action alleging infringement of U.S. Patents 11,334,598, 11,360,999 and 11,475,047, relating to methods for allocating and pricing transportation services based on supply, demand and performance factors. Contact: James Glass, Esq., Quinn Emanuel Urquhart & Sullivan LLP, 51 Madison Avenue, 22nd Floor, New York, New York 10010.

347. *Samsung Electronics, Co. Ltd.. v. Cardware, Inc.*, IPR2023-00314, Patent Trial and Appeal Board. Serving as an expert for Petitioner in an inter-partes review of U.S. Patent 10,628,820, relating to a device for simulating a magnetic-stripe credit card. Contact: Nicholas Stevens, Esq., Fish & Richardson, 60 South Sixth Street, Suite 3200, Minneapolis, MN 55402. (R)

348. *Election Systems & Software, LLC v. Smartmatic USA Corporation,* 1:18-cv-01259-UNA (D. Del.). Served as an expert for plaintiff in a case alleging infringement of U.S. Patent 8,096,471, relating to a ballot marking device having an attached ballot box. The asserted claims were found ineligible under 35 U.S.C. § 101. Contact: Robert M. Evans, Jr., Esq., Lewis Rice LLC, 600 Washington Avenue, Suite 2500, St. Louis, MO 63101. (D,R)

349. *Textile Computer Systems, Inc. v. Broadway National Bank et al.,* 6:21-cv-00150-ADA (W.D. Tex.). Served as an expert for defendants in cases (including 6:21-cv-00152, 6:21-cv-00154, 6:21-cv-00156 and 6:21-cv-00157) alleging infringement of U.S. Patents 8,505,079, 8,533,802, 9,584,499, 10,148,659, and 10,560,454 relating to online authentication methods. Case has settled. Contact: Jeffrey D. Blake, Esq., Merchant & Gould, 191 Peachtree Street NE, Suite 3800, Atlanta, GA 30303.

350. *Kroy IP Holdings, LLC v. Groupon, Inc.,* 1:17-cv-01405-MN (D. Del.). Served as an expert for defendant in a case alleging infringement of U.S. Patent 6,061,660, relating to online incentive and award fulfillment methods. All claims found invalid on a motion to dismiss. Contact: Ryan Phelan, Esq., Marshall, Gerstein & Borun, LLP, 233 South Wacker Drive, 300 Willis Tower, Chicago, IL 60606-6357.

351. *Underwood v. IFA Holdings, LLC dba Cygnal,* 1:21-cv-00830-ACA (N.D. Ala.). Served as an expert for defendant in a case alleging violations of the Telephone Consumer Protection Act (TCPA), 47 U.S.C. § 227. Case has settled. Contact: Stephen J. Baumgarner, Esq., Maynard Cooper & Gale LLP, 1901 Sixth Ave. North, Suite 1700, Birmingham, AL 35203.

352. *BJ's Wholesale Club Holdings, Inc. v. Walmart Apollo, LLC.,* IPR2022-01528, -01561, -01563, -01564, Patent Trial and Appeal Board. Serving as an expert for Petitioner in an inter-partes reviews of U.S. Patent 10,803,435, relating to a method for retail self-checkout using a mobile device. Contact: Michael Messinger, Esq., Vorys, Sater, Seymour and Pease LLP, 1909 K Street NW, Suite 900, Washington, DC 20006-1152. (R)

353. *Samsung Electronics, Co. Ltd.. v. Cardware, Inc.,* PGR2023-00012, PGR2023-00013, Patent Trial and Appeal Board. Serving as an expert for Petitioner in post-grant reviews of U.S. Patent 11,328,286, relating to a device for simulating a magnetic-stripe credit card. Contact: Nicholas Stevens, Esq., Fish & Richardson, 60 South Sixth Street, Suite 3200, Minneapolis, MN 55402. (R)

354. *Daedalus Blue, LLC v. Microsoft Corporation,* Case 6:20-cv-01152-ADA (W.D. Texas). Served as an expert for plaintiff in an action alleging infringement by of U.S. Patent 7,177,886, relating to reliable backup to remote servers, U.S. Patent 7,437,730, relating to scalable on-demand virtual machine deployment, U.S. Patent 8,381,209, relating to hypervisor access control mechanisms, U.S. Patent 8,572,612, relating to scaling of virtual machines in a cloud computing environment, and U.S. Patent 8,671,232, relating to policy-based data management in storage-area networks. Case has settled. Contact: Robin Curtis, Esq., Bunsow De Mory LLP, 701 El Camino Real, Redwood City, CA 94063.

355. *Ebates Performance Marketing, Inc. d/b/a Rakuten Rewards v. International Business Machines Corporation*, IPR2022-00646, Patent Trial and Appeal Board. Serving as an expert for patent owner in an *inter partes* review of U.S. Patent 7,631,646, relating to single sign-on in a federated computing environment. Contact: Karim Oussayef, Esq., Desmaris, LLP, 230 Park Avenue, 26th Floor, New York, NY 10169. (D,R)

356. *Roku, Inc. v. IOENGINE, LLC*, IPR2022-01551, IPR2022-01552, IPR2022-01553, IPR2022-01554, Patent Trial and Appeal Board. Served as an expert for Patent Owner in inter-partes reviews of U.S. Patent 10,972,584, relating to a secure portable device implementing a plug-n-play VPN. Institution denied in all four cases. Contact: Greg Chuebon, Esq., Dechert LLP, Three Bryant Park, 1095 Avenue of the Americas, New York, NY 10036-6797. (R)

357. *Apple, Inc. v. Fintiv, Inc.*, IPR2023-00398, IPR2023-00399, Patent Trial and Appeal Board. Serving as an expert for Patent Owner in inter-partes reviews of U.S. Patents 10,438,196 and 9,208,488, respectively, relating to an infrastructure supporting multiple mobile wallet providers. Contact: Marcus Barber, Esq., Kasowitz Benson Torres LLP, 333 Twin Dolphin Drive, Suite 200, Redwood Shores, CA 94065. (R)

358. *IOENGINE, LLC v. Roku, Inc.*, Case 6:21-cv-01296-ADA (W.D. Texas). Serving as an expert for Patent Owner in a case alleging infringement of U.S. Patents 10,447,819 and 10,972,584, relating to a secure portable device implementing a plug-n-play VPN. Contact: Greg Chuebon, Esq., Dechert LLP, Three Bryant Park, 1095 Avenue of the Americas, New York, NY 10036-6797. (R)

359. *United States v. David Gerald Minkkinen et al.*, Case 2:22-cr-00613 (D. W.Va). Serving as an expert for defendant Minkkinen in a case alleging theft of trade secrets relating to statewide unemployment insurance systems. Contact: Mike Nogay, Esq., Sellitti, Nogay & Nogay, PLLC, 3125 Pennsylvania Avenue, Weirton, West Virginia 26062. (R)

360. *Hum Industrial Technology, Inc. v. Amsted Rail Company, Inc.*, IPR2023-00538, IPR2023-00539, IPR2024-00540, Patent Trial and Appeal Board. Serving as an expert for Patent Owner in inter-partes reviews of U.S. Patents 9,365,223, 9,981,673, and 10,137,915, repectively, relating to systems for detecting anomalies in train consists and railcars. Contact: Ryan N. Miller, Esq., Fox Rothschild LLP, 2000 Market Street, 20th Floor, Philadelphia, PA 19103-3222. (R)

361. *Entain Corporate Services Ltd. et al. v. GAN (UK) Limited*, IPR2023-00027, Patent Trial and Appeal Board. Serving as an expert for Patent Owner in an inter-partes review of U.S. Patent 8,821,296, relating to casino management systems for linking online and offline gaming accounts. Contact: Jarrad M. Gunther, Esq., Duane Morris LLP, 30 South 17th Street, Philadelphia, PA 19103-4196. (R)

362. *Ex Parte Reexamination of U.S. Patent 8,762,498*, Control No. 90/015,238. Served as an expert for Unified Patents in a reexamination of U.S. Patent 8,762,498, drawn to Internet communications through a virtual domain. Contact: Michael H. Jones. Esq., Rothwell, Figg,

Ernst & Manbeck, P.C., 901 New York Avenue, N.W., Suite 900 East, Washington. DC 20001. (R)

Legislative Testimony

Testimony before the Texas Legislature concerning electronic voting, Austin, Texas, 1987. Result: passage of the Texas Electronic Voting Law.

Invited testimony before the British House of Lords, Subcommittee B of the European Union Committee, April 20, 2000. Subject: European regulation of eCommerce.

Testimony before the Pennsylvania Legislature State Government Committee concerning electronic voting, Philadelphia, March 10, 2004.

Testimony before the United States Commission on Civil Rights concerning electronic voting, Washington, DC, April 9, 2004.

Testimony before the U.S. House of Representatives Committee on Science concerning voting system certification, Washington, DC, June 24, 2004.

Testimony before the U.S. House of Representatives Committee on House Administration concerning voting system security, Washington, DC, July 7, 2004.

Testimony before the U.S. House of Representatives Committee on Government Reform concerning electronic voting technology, Washington, DC, July 20, 2004.

Testimony on DREs and paper trails before the Virginia Legislature Study Commission on Voting System Certification and Security, Richmond, VA, August 16, 2004.

Testimony before the Election Assistance Commission, Technical Guidelines Development Committee, Subcommittee on Computer Security and Transparency, Gaithersburg, MD, Sept. 20, 2004.

Testimony before the House Ways and Means Committee of the Maryland General Assembly on voting machine paper trails, Annapolis, MD, December 7, 2004.

Testimony before the U.S. House of Representatives Committee on House Administration concerning paper trails, Washington, DC, September 28, 2006.

Testimony before the U.S. Election Assistance Commission concerning the Voting System Testing and Certification Program, Washington, DC, October 26, 2006.

Testimony before the Georgia State Board of Elections, Powder Springs, GA, December 21, 2007.

Testimony before the Maryland House of Delegates Ways and Means Committee, Annapolis, MD, January 18, 2007.

Testimony before the U.S. Senate Committee on Rules and Administration on the Ballot Integrity Act of 2007, Washington, DC, July 25, 2007.

Arbitration

Dr. Shamos has served as an arbitrator in computer-related disputes for the American Arbitration Association.

Electronic Voting

Dr. Shamos has served as an examiner of electronic voting systems and consultant on electronic voting.

Member, Sarasota Source Code Audit Task Force, Florida Secretary of State (2007-2008)

Consultant to the Pennsylvania Secretary of the Commonwealth (2004-).

Consultant to the Massachusetts Secretary of the Commonwealth (2006).

Project SERVE Security Peer Review Group (2003).

Attorney General's Designee for electronic voting examinations, State of Texas (1987-2000).

Statutory Examiner for electronic voting, Commonwealth of Pennsylvania (1980-1996).

Consultant to Montgomery County, Pennsylvania (1996).

Consultant to the Secretary of State of Nevada (1996).

Consultant to the Delaware Legislature (1989).

Consultant to the Secretary of State of West Virginia (1984).

Business Experience

President, Expert Engagements LLC, expert witness firm (2003-present).

President, Unus, Inc., database publishing software (formerly Unilogic, Ltd.) (1990-1992)

President, Notifax Corporation (1989-1994). Automated notification by facsimile.

President, Lexeme Corporation (1984-87), software language translation products.

Managing Partner, Shamos and Tchen (1978-82), computer consulting firm.

Supervisory Programmer, National Cancer Institute (1970-72), while a commissioned officer in the United States Public Health Service (O-3).

Associate Engineer, IBM Corporation (1968-70) (Components Division), design of manufacturing information systems.

Consulting

Morgan Stanley Dean Witter (2000-2002) (now Morgan Stanley).

McKinsey & Co. (1999-2001).

Bell Atlantic Corporation (1999-2008) (now Verizon).

LG-CNS, South Korea (2002-2004). Project to automate the Korean court system.

Directorships

Unilogic, Ltd. (1979–87) (later Unus, Inc. d/b/a Cygnet Publishing Technologies, 1987-2013). Database publishing software.

The Billiard Archive (1983–). Historical nonprofit foundation.

Lexeme Corporation (1984-1987). Computer source language translation.

Notifax Corporation (1989-1994)

Insurance Technology Corporation (1992–1995). IT consulting for the insurance industry.

Personal Data

Date of birth: April 21, 1947.

Married to Julie Shamos (formerly Julie Van Allen), August 12, 1973.

Children: Josselyn (born May 20, 1982), Alexander (born August 3, 1984).

Grandchildren: Harlow Elizabeth Crane (born April 9, 2010), Bishop Moses Crane (born July 13, 2012), Amelia Eleanor Shamos (born April 17. 2019), Sophia Anastasia Shamos (born March 14, 2021)

Military Status: Veteran (Commissioned Officer, U.S. Public Health Service, 1970-72).

Contact Information

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Pittsburgh, PA 15213
Office Telephone: 412-268-8193
Office Fax: 412-268-6298
Email: shamos@cs.cmu.edu

Publications

Google Scholar citations. Erdös number = 3: Erdös -> {Daniel Kleitman, Patrick O'Neill, Joel Spencer} -> Albert Meyer -> Shamos

SCIENCE

Books

1. *Computational Geometry: An Introduction*, with F. P. Preparata. Springer-Verlag (1985, revised ed., 1991), 390 pp. ISBN 0387961313. According to CiteSeer in 2012, this is the 93rd most cited work in the field of computer science.

2. *Вычислительная геометрия: введение*. Russian translation of "Computational Geometry: An Introduction." Moscow: Mir Publishers (1989). ISBN 5030010416.

3. *Keisan kikagaku nyumon*. Japanese translated by T. Asano and T. Asano of *Computational Geometry: An Introduction*, with F. P. Preparata. Soken Shuppan (Jul. 1992). ISBN 4795263213.

4. *Handbook of Academic Titles*. 193 pp. (Jan. 2011). An encyclopedia of various academic designations used at over 1000 colleges and universities in the United States.

5. *Geometria obliczeniowa. Wprowadzenie*. Polish translation of "Computational Geometry: An Introduction." Warsaw: Helion (2003) 392 pp. ISBN 83-7361-098-7.

6. *Shamos's Catalog of the Real Numbers*. A list, patterned after Sloane & Plouffe, The Encyclopedia of Integer Sequences, Academic Press (1995). Over 10,000 interesting real numbers arranging in lexical order by decimal expansion, with accompanying formulas.

Book Chapters

1. "Privacy and Public Records." Chapter 16 in *Personal Information Management*, Jones & Teevan, eds., Univ. of Washington Press (2007), ISBN978-0-295-98737-8.

Articles

1. "On the Piezoelectric Effect in Bone," with M. H. Shamos and L. S. Lavine. *Nature* **197**:81 (1963).

2. "An Absorber Theory of Acoustical Radiation," with M. A. Tavel. *Journal of the Acoustical Society of America* **54**:46–49 (1973).

3. "Problems in Computational Geometry." Unpublished book manuscript (1974, revised 1977). Distributed in photocopy.

4. "Geometric Complexity." *Proceedings of the Seventh Annual ACM Symposium on Automata and Theory of Computation* (May 1975) 224–233.

5. "Closest-point Problems," with D. J. Hoey. *Proceedings of the Sixteenth IEEE Symposium on Foundations of Computer Science* (Oct. 1975) 151–162.

6. "Divide and Conquer in Multidimensional Space," with J. L. Bentley. *Proceedings of the Eighth Annual ACM Symposium on Automata and Theory of Computing* (May 1976) 220–230.

7. "Geometric Intersection Problems," with D. J. Hoey. *Proceedings of the Seventeenth Annual IEEE Symposium on Foundations of Computer Science* (Oct. 1976) 208–215.

8. "Lower Bounds from Complex Function Theory," with G. Yuval. *Proceedings of the Seventeenth Annual IEEE Symposium on Foundations of Computer Science* (Oct. 1976) 268–273.

9. "Geometry and Statistics: Problems at the Interface." In *Algorithms and Complexity: New Directions and Recent Results*, J. F. Traub, ed., Academic Press (1976) 251–280.

10. "Divide and Conquer for Linear Expected Time," with J. L. Bentley. *Information Processing Letters* 7 (1977) 87–91.

11. "A Problem in Multivariate Statistics: Algorithm, Data Structure, and Applications," with J. L. Bentley. *Proceedings of the Fifteenth Allerton Conference on Communications, Control and Computers* (Sep. 1977) 193–201.

12. "Optimal Algorithms for Structuring Geographic Data," with J. L. Bentley. *Proceedings of the Harvard Conference on Topological Data Structures for Geographic Information Systems* (Oct. 1977) 43–51.

13. "Computational Geometry." Ph.D. Thesis, Yale University (1978). University Microfilms, Ann Arbor, MI.

14. "Time and Space," with A. R. Meyer. In *Perspectives on Computer Science*, A. K. Jones, ed. Academic Press (1978).

15. *Combinatorics on Graphs I: Graph Polynomials*. Unpublished book manuscript (1978).

16. "Robust Picture Processing Operators and Their Implementation as Circuits." *Proceedings of the Fall 1978 Workshop on Image Processing*, Carnegie Mellon University (1978).

17. "A practical system for source language translation," with T. R. Kueny and P. L. Lehman. *Proceedings of the National Conf. on Software Reuseability and Maintainability*, pp. B-1 – B-12, Washington, DC (Sep. 1986).

18. "The Early Years of Computational Geometry – A Personal Memoir." *Advances in Discrete and Computational Geometry* (B. Chazelle, J. E. Goodman, and R. Pollack, eds.), *Contemporary Mathematics*, Amer. Math. Soc., Providence (1998).

19. "A Multiparty Computation for Randomly Ordering Players and Making Random Selections," with Latanya Sweeney. Carnegie Mellon Univeristy School of Computer Science Technical Report CMU-ISRI-04-126 (July 2004)

20. *Overcounting Functions*. A systematic method of transforming certain multiple summations into single summations, with new number-theoretic results.

21. *Property Enumerators and a Partial Sum Theorem*. A new result allowing rapid symbolic evaluation of certain types of double summations.

DIGITAL LIBRARIES

Articles

1. "Machines as readers: a solution to the copyright problem." J. Zhejiang Univ. Science 6A, 11, pp. 1179-1187 (Nov. 2005).

Book Chapters

1. "The Universal Digital Library: Intelligent Agents and Information on Demand," with Raj Reddy. Chapter 6 in Emerging Communication Technologies and the Society, by N. Balakrishnan, Indian National Science Academy (2000). ISBN 81-7319-341-X.

Reports

1. "Japanese Digital Information Policy, Intellectual Property and Economics," in "Digital Information Organization in Japan," International Technology Research Institute (1999).

ELECTRONIC VOTING

Books

1. "Glossary of Electronic Voting."

Articles

2. "Voting System Certification — An Examiner's View." Invited paper presented at the Election Center Conference, Reno, Nevada (Sep. 1989).

3. "Electronic Voting — Evaluating the Threat." Proc. Third ACM Conf. on Computers, Freedom & Privacy, San Francisco, CA (Mar. 1993).

4. "Paper v. Electronic Voting Records — An Assessment." Proc. 14th ACM Conf. on Computers, Freedom & Privacy, Berkeley, CA (Apr. 2004).

5. "Evaluation of Voting Systems," with P.L. Vora, B. Adida, R. Bucholz, D. Chaum, D. Dill, D. Jefferson, D. Jones, W. Lattin, A. Rubin and M. Young, Commun. ACM 47(11):144 (2004).

6. "Voting as an Engineering Problem." *The Bridge* (publication of the National Academy of Engineering), Summer 2007, pp. 35-39.

7. "Realities of E-Voting Security," with A. Yasinsac. IEEE Security and Privacy 10:5 (Sep/Oct 2012), pp. 16-17. Also guest editor of that issue, devoted to E-voting Security.

8. "Why our voting systems are safe." Op-ed in the Pittsburgh Post-Gazette, Dec. 31, 2016.

Published Reports

9. "Software and Security Analysis of the ES&S iVotronic 8.0.1.2 Voting Machine Firmware," with Yasinsac et al., February 23, 2007. Review commissioned by the Secretary of State of Florida to investigate irregularities in the Florida Congressional District 13 election of 2006.

BILLIARDS

Books

1. *Pool.* New York: Mallard Press division of Bantam-Doubleday-Dell Promotional Book Company (Aug. 1991). 128 pp. ISBN 0-7924-5310-7.

2. *Le billard et le billard américain*. Paris: Minerva, 1992, reprinted 1997. 128 pp. Translation by Jean-Yves Prate of the author's American book, *Pool*. ISBN 2–8307–0160–7 (1992), 2-8814-3135-6 (1997).

3. *The Illustrated Encyclopedia of Billiards*. New York: Lyons & Burford (1993). 310 pp. ISBN 1-55821-219-1.

4. *Pool Snooker Carambola*. Padua: Facto Edizioni (1993). 128 pp. Italian translation of *Pool*. Translated by Elisabetta Bezzon. ISBN 88-85860-20-6. The first English-language billiard book ever published in Italian.

5. *Pool*. New York: Friedman/Fairfax (Jun. 1994). 128 pp. ISBN 1-56799-061-4. Paperback edition of the author's 1991 *Pool*.

6. *Shooting Pool: The People, the Passion, the Pulse of the Game*, with photographs by George Bennett. New York: Artisan (Jun. 1998). 144 pp. ISBN 1-885183-95-X. A photographic survey of pool in the U.S. in 1997. A Book-of-the-Month Club bonus selection (Fall, 1998).

7. *Setting the Stage for Fifty Years*. Coralville, IA: Billiard Congress of America (Jun. 1998). 88 pp. A history of the Billiard Congress of America.

8. *The New Illustrated Encyclopedia of Billiards*. New York: Lyons Press (1999). 320 pp. ISBN 1-55821-797-5. An expanded and revised edition of *The Illustrated Encyclopedia of Billiards*.

9. *The Complete Book of Billiards*. New York: Gramercy Books (2000). 306 pp. ISBN 0-517-20869-5. Reissue of author's 1993 *The Illustrated Encyclopedia of Billiards*.

In Preparation

SCIENCE

Articles

1. *A Graph-Theoretic Model of Electronic Payment Systems*, with Michael Trick.

LAW

Books

1. *A Dictionary of American Intellectual Property* (1995).

Invited Talks

ELECTRONIC COMMERCE

"The Future of eCommerce." Presentation to the Association for Corporate Growth, Pittsburgh, PA (Dec. 2001).

"The U.S., Korea and the Internet Bubble." Korea International Trade Association (Seoul, July 2003).

"Electronic Judiciary Services in the United States." Address at the Supreme Court of Korea (Dec. 2004).

"eGovernment in the United States." Public address at the University of Hong Kong (Feb. 2005).

"Global SCM as a Cross-Border eCommerce Model," Korea International Trade Association, Seoul, Korea (Mar. 2007).

"Innovate or Die." Invited talk at the Verizon Leadership Meeting, Morristown, NJ (Jun. 2007).

"A Formula for Innovation." Public address at the University of Hong Kong (Feb. 2008).

"Ask My Robot: How Computers Answer Questions." University of Hong Kong (Feb. 2013).

"How Bitcoin Works: A Non-Technical Introduction." University of Hong Kong (Mar. 2014).

"What's a Bitcoin? A Non-Technical Introduction." Carnegie Mellon University (Oct. 2014).

COMPUTER SCIENCE

"Surprises in Experimental Mathematics." Carnegie Mellon University Mathematics Seminar (Feb. 2002).

"Learning by Doing or Learning by Listening?" University of Hong Kong (Feb. 2007).

"Discoveries in Experimental Mathematics." University of Hong Kong (Feb. 2009).

"How Did It (Computational Geometry) Start?" Keynote address at the 20th Canadian Conference on Computational Geometry, Montreal, Canada (Aug. 2008).

"The Internet of Everything." University of Hong Kong (Mar. 2015).

"How Do Driverless Cars Work?" University of Hong Kong (Mar. 2017).

"How Machines Learn (Without Being Taught)." University of Hong Kong (Feb. 2018).

"What is Quantum Computing All About?" University of Hong Kong (Feb. 2019).

SCIENCE AND LAW

"Digital Property in the 21st Century." Keynote address for the Spring Meeting of the American Intellectual Property Law Association, Pittsburgh, PA (May 2000). View slides.

"Who Owns This Algorithm?" Carnegie Mellon University (Nov 1991); Microelectronics and Computer Corporation (Jan. 1992); Univ, of Texas at Austin (Jan. 1992); UCLA (Feb. 1992).

"New Computer Technology and Its Application to Worker's Compensation." Forum IV, Newport Beach, CA (Feb. 1992).

"The Office of the Future, If There Is One." 1994 IAIABC Conf., Pittsburgh, PA (Sep. 1994).

"The Fringes of Infringement." University of Texas, Austin, TX (Sep. 1995).

"The Arts and the Internet." Allegheny County Bar Association Continuing Legal Education course (June 26, 1996).

"The Universal Information Resource." Inventing the Future, Symposium in Honor of Raj Reddy's 60th Birthday, Carnegie Mellon University, Pittsburgh, PA (May 1998).

"The Universal Library." University of Texas at Austin (Sep. 1998)

"The Universal Library and Its Role in Scientific Information." Keynote address to the RNA Society symposium on Emerging Sources of RNA Information, Arlington, VA (Dec. 8, 1998).

"Digital Property in the 21st Century." Luncheon address to the American Intellectual Property Law Association, Pittsburgh, PA (May. 2000).

"Copyright Protection and Distance Learning." Hong Kong Intellectual Property Office (Feb. 2002).

"The Universal Dictionary." Address at International Institute of Information Technologies (IIIT), Hyderabad, India (Jan. 2003).

"The Million Book Projects." Public address at the University of Hong Kong (Jan. 2003).

"Mathematics and the Privacy Laws." ALADDIN Workshop on Privacy in D.A.T.A., Pittsburgh, PA (Mar. 2003).

"Machines as readers: a solution to the copyright problem." 1st Int'l Conf. on Universal Digital Library, Hangzhou, China (Nov. 2005).

"Your Books Might Cost More Now: The Role of the Expert in Software Patent Litigation." University of Hong Kong (Feb. 2006).

"University Technology Transfer: How to Fix It." Asia Conference on Technology Transfer (ACTT) 2006, Seoul, S. Korea (Mar. 2006).

"How Big a Problem is Copyright"? USAIN Conference, Cornell University, Ithaca, NY (Oct. 2006).

"Digital Ownership." 2d Intl. Conf. on Universal Digital Library, Alexandria, Egypt (Nov. 2006).

"Google and the Death of Books." University of Hong Kong (Feb. 2010).

"FaceWars." (About the lawsuit between Facebook and the Winkelvoss twins). University of Hong Kong (Feb. 2011).

"Swiping the iPhone: Billions Lost With the Stroke of a Pen." University of Hong Kong (Feb. 2012).

"Global Phone Wars: Apple v. Samsung." University of Hong Kong (Mar. 2016).

ELECTRONIC VOTING

"Voting System Certification — An Examiner's View." Election Center Conference, Reno, Nevada (Sep. 1989).

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"Opscan Voting: The Good, the Bad and the Ugly." Florida State Association of Supervisors of Elections, Destin, Florida (May 24, 2007).

"Voting Machine Fraud." University of Pittsburgh (Nov. 11, 2008)

Exhibit B

EXHIBIT B

MATERIALS CONSIDERED

All documents reference in my infringement reports in this litigation
All documents referenced in this Report and its Exhibits and the following:

Litigation Documents (other litigation)

Claim construction order in *Lexos Media IP, LLC v. APMEX, Inc.*, 2:16-CV-00747-JRG-RSP
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Defendant Nike, Inc.'s Responses to Lexos Media IP, LLC's First Set of Interrogatories (Nos. 1-9)
Defendant The Gap, Inc.'s Responses to Plaintiff's First Set of Interrogatories (Nos. 1–9)
Defendant Ulta Beauty, Inc.'s First Supplemental Responses to Plaintiff's First Set of Interrogatories to Defendant Ulta Beauty, Inc. (Nos. 1–7)
Defendants Walmart Inc.'s and Wal-Mart.Com USA, LLC's Objections and Answers to Plaintiff's First Set of Interrogatories (Nos. 1-9)
Defendants' P.R. 3-3 Invalidity Contentions and Ineligibility Contentions dated January 27, 2023, and exhibits, appendices and attachments thereto
Defendants' P.R. 3-3 Invalidity Contentions and Ineligibility Contentions for the '241 Patent dated January 27April 3, 2023, and exhibits, appendices and attachments thereto
Expert Report of Glenn E. Weadock Regarding Invalidity of U.S. Patent No. 5,995,102, U.S. Patent No. 6,118,449, U.S. Patent No., 7,975,241, exhibits thereto and materials referenced therein
Opening Expert Report of Dr. Henry Houh, exhibits thereto and materials referenced therein
Plaintiff Lexos Media IP, LLC's Amended Complaint For Patent Infringement (Dkt. 89, v. The Gap)
Plaintiff Lexos Media IP, LLC's Amended Complaint For Patent Infringement (Dkt. 86, v. Ulta)
Plaintiff Lexos Media IP, LLC's Amended Complaint For Patent Infringement (Dkt. 85, v. Walmart)
Plaintiff Lexos Media IP, LLC's Disclosure of Additional Infringement Contentions Regarding Defendant The Gap, Inc.
Plaintiff Lexos Media IP, LLC's Disclosure of Additional Infringement Contentions Regarding Defendant Nike, Inc.
Plaintiff Lexos Media IP, LLC's Disclosure of Additional Infringement Contentions Regarding Defendant Ulta Beauty, Inc.
Plaintiff Lexos Media IP, LLC's Disclosure Of Additional Infringement Contentions Regarding Defendants Walmart, Inc. and Wal-Mart.Com USA, LLC
Plaintiff Lexos Media's Disclosure of Asserted Claims and Infringement Contentions Regarding Defendant Nike, Inc.

Plaintiff Lexos Media's Disclosure of Asserted Claims and Infringement Contentions Regarding Defendant The Gap, Inc.
Plaintiff Lexos Media's Disclosure of Asserted Claims And Infringement Contentions Regarding Defendant Ulta Beauty, Inc.
Plaintiff Lexos Media's Disclosure of Asserted Claims and Infringement Contentions Regarding Defendant Walmart, Inc., et al.

Patents and Patent Applications
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US 6,118,449, and its prosecution history
US 7,975,241, and its prosecution history

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GAP_LM_00003336-3359-JtCC Amazon
GAP_LM_00003342-3048-449FH
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GAP_LM_00005275-5280-3d Amended DCO Amazon
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PTAB Proceedings
All substantive documents filed in IPR2018-01749
All substantive documents filed in IPR2018-01750
All substantive documents filed in IPR2023-01000
All substantive documents filed in IPR2023-01001

Exhibit C

Trials@uspto.gov
Tel: 571-272-7822

Paper 21
Entered: April 3, 2020

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RALPH LAUREN CORPORATION,
Petitioner,

v.

LEXOS MEDIA IP, LLC,
Patent Owner.

IPR2018-01749
Patent 5,995,102

Before PHILLIP J. KAUFFMAN, J. JOHN LEE, and SHARON FENICK, *Administrative Patent Judges.*

FENICK, *Administrative Patent Judge*.

DECISION
Final Written Decision
Determining Some Challenged Claims Unpatentable
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Ralph Lauren Corporation ("Petitioner") filed a Petition (Paper 2, "Pet."), requesting an *inter partes* review of claims 70–73 ("challenged claims") of U.S. Patent No. 5,995,102 (Ex. 1001, "the '102 patent"). Lexos Media IP, LLC ("Patent Owner") waived its right to file a preliminary response. Paper 6. Applying the standard set forth in 35 U.S.C. § 314(a), we instituted an *inter partes* review of the challenged claims of the '102 patent on the grounds asserted in the Petition. Paper 7 ("Inst. Dec."). Following institution, Patent Owner submitted a Response (Paper 14, "PO Resp."), Petitioner filed a Reply (Paper 15, "Pet. Reply"), and Patent Owner filed a Sur-Reply (Paper 16, "PO Sur-Reply"). An Oral Hearing on this matter and a related case (IPR2018-01755) was held on January 6, 2020. The Hearing Transcript ("Tr.") is included in the record as Paper 20.

We have jurisdiction under 35 U.S.C. § 6(b)(4). This Final Written Decision issues under 35 U.S.C. § 318(a). Having considered the evidence of record, and for the reasons discussed below, Petitioner has demonstrated by a preponderance of the evidence that claims 71 and 73 of the '102 patent are unpatentable under 35 U.S.C. § 103(a), but has not demonstrated by a preponderance of the evidence that claims 70 and 72 of the '102 patent are unpatentable.

II. BACKGROUND

A. Real Parties in Interest

Petitioner identifies itself and Club Monaco Corporation, Club Monaco US LLC, Ralph Lauren Media LLC, PRL USA Holdings, Inc., and Adobe Systems Incorporated as real parties in interest. Pet. 1. Patent Owner identifies itself as the real party in interest, and notes that Cote IP Services,

LLC and Lexos Media, Inc. each own 50% of Patent Owner Lexos Media IP, LLC's stock. Paper 3, 2.

B. Related Proceedings

Petitioner and Patent Owner each indicate that the '102 patent is at issue in *Lexos Media IP, LLC v. Ralph Lauren Corp. et al.*, No. 1:17-cv-01319-LPS (D. Del.). Pet. 1–2; Paper 3, 2. Petitioner and Patent Owner additionally indicate that the '102 patent is at issue in *Lexos Media IP, LLC v. Jos A Bank Clothiers, Inc.*, No. 1:17-cv-01317 (D. Del). Pet. 2; Paper 3, 2. Patent Owner additionally indicates that the '102 patent is at issue in *Lexos Media IP, LLC v. TJX Cos., Inc.*, No. 1:17-cv-01320 (D. Del), and *Lexos Media IP, LLC v. Boscov's Department Store, LLC*, No. 2-17-cv-00373 (E. D. Tx.). Paper 3, 2–3. Along with these pending litigations, Petitioner and Patent Owner describe or list additional, now-terminated, cases in which Patent Owner asserted the '102 patent and/or U.S. Patent No. 6,118,449 (Ex. 1002, "the '449 patent"), which claims priority from the '102 patent. Pet. 2; Paper 3, 2–4. The '449 patent is the subject of IPR2018-01755, filed by Petitioner, in which a final written decision was issued on March 25, 2020. Pet. 2; Paper 3, 4; *Ralph Lauren Corp. v. Lexos Media IP, LLC*, IPR2018-01755, Paper 22.

C. Overview of the '102 Patent

The '102 patent is directed to "[a] system for modifying a cursor image, as displayed on a video monitor of a remote terminal, to a specific image having a desired shape and appearance." Ex. 1001, code (57). The context of the invention relates to a graphical user interface in which a pointing device is used by the user to navigate a video display, and in which movement of the pointing device is indicated by a corresponding movement

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of a cursor on the video display. *Id.* at 8:24–37. A generic cursor may be an arrow, pointing hand, hourglass, etc. *Id*. at 3:57–61. The '102 patent relates to changing that generic cursor by sending data and control signals from a remote computer to replace such a cursor with a cursor having an appearance that is associated with other content being displayed to the user, e.g., a logo, mascot, or an image of a product or service, related to the other content being displayed to the user. *Id*. at 3:4–9, 17:5–18:3. Figure 8 of the '102 patent, reproduced below, shows a web page according to the invention.

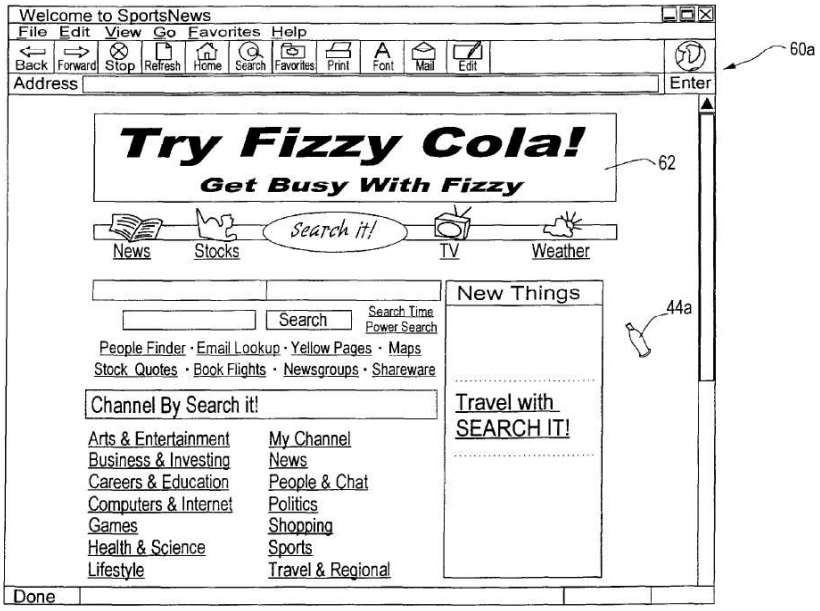


FIG. 8

In Figure 8, shown above, web page 60a is displayed to a user, including banner ad 62 for cola. *Id.* at 13:31–37. The cursor to be used with this web page changes from a standard cursor (e.g., an arrow) to cola-bottle-shaped cursor 44a in association with the banner ad 62. *Id.*

The '102 patent describes interactions between a server system and a user's terminal to effect the cursor change. *Id.* at 4:4–9, 5:37–49, 5:48–65, 7:16–40. The user terminal is controlled by an operating system ("OS"), and

application programs such as a browser running on the user terminal use an application programming interface ("API") to interface with the OS. *Id.* at 7:29-40, Fig. 2.

The server system transmits specified content information to the user terminal, including information to be displayed on the user's computer (such as a hypertext markup language ("HTML") web page), cursor display instruction, and cursor display code. *Id.* at 8:4–23. The cursor display instruction indicates where the cursor image data corresponding to the new appearance of the cursor resides. *Id.* at 8:49–64. The cursor display code causes the user's terminal to display that cursor image data in place of the original cursor, using the API of the operating system to effect these changes. *Id.* at 8:34–37, 8:52–57; 13:19–30.

D. Illustrative Claims

All of the challenged claims are independent. Claims 70 is reproduced below, with formatting changes for readability.

Claim 70 recites:

> 70. [Preamble][1] A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:
> [a] cursor image data corresponding to said specific image;
> [b] cursor display code, said cursor display code operable to modify said cursor image; and
> [c.i] a first server computer for transmitting specified content information to said remote user terminal,
>
> [c.ii] said specified content information including at least

[1] The Petition provides bracketed labels for the elements of the independent claims. *See*, *e.g.*, Pet. 31–44; Ex. 1008. For clarity, we use these labels in this Decision.

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> one cursor display instruction indicating a location of said cursor image data, said cursor display instruction and said cursor display code operable to cause said user terminal to display a modified cursor image on said user's display in the shape and appearance of said specific image,
>
> [c.iii] wherein said specified content information is transmitted to said remote user terminal by said first server computer responsive to a request from said user terminal for said specified content information, and wherein said specified content information further comprises information to be displayed on said display of said user's terminal,
>
> [c.iv] said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over
>
> a display of said at least a portion of said information to be displayed on said display of said remote user's terminal.

Ex. 1001, 23:15–46.

Claim 71 is identical to claim 70, with the exception of the recitation in corresponding limitation [c.iv] that the cursor display code is operable to process the cursor display instruction to modify the cursor image "responsive to movement of said cursor image *over a specified location on said display of said user's terminal*." *Id.* at 23:47–24:9 (emphasis added).

Claim 72 is reproduced below, with formatting changes for readability.

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72. [Preamble] A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:

[a] receiving a request at said at least one server to provide specified content information to said user terminal;

[b] providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image; and

[c.i] transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction, wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal, and

[c.ii] wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal.

Id. at 24:9–36.

Claim 73 is identical to claim 72, with the exception of the recitation in corresponding limitation [c.ii] that the cursor display code is operable to process the cursor display instruction to modify the cursor image "responsive to movement of said cursor image over *a specified location on said display of said user's terminal*." *Id.* at 24:37–62 (emphasis added).

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E. Evidence Relied Upon by Petitioner

Petitioner relies on the following references:

Reference		Issue Date	Exhibit
Malamud et. al. ("Malamud")	U.S. Patent No. 6,437,800 B1	Aug. 20, 2002 (filed Oct. 26, 1994)	Ex. 1004
Anthias	U.S. Patent No. 5,920,311	July 6, 1999 (filed Dec. 6, 1993)	Ex. 1005
Baker	U.S. Patent No. 5,715,416	Feb. 3, 1998 (filed Sept. 30, 1994)	Ex. 1007

Petitioner also relies on a declaration from Benjamin B. Bederson, Ph.D. (Ex. 1003).

F. Asserted Grounds

Petitioner presents the following grounds of unpatentability, each on the basis of pre-AIA 35 U.S.C. § 103(a):

Claims Challenged	References
70–73	Malamud, Anthias
70–73	Baker, Anthias

Pet. 1.

III. ANALYSIS

A. Legal Standards

It is a petitioner's burden to demonstrate unpatentability. *See Dynamic Drinkware, LLC v. Nat'l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1326–27 (Fed. Cir. 2008)). Petitioner bears "the burden of proving

. . . unpatentability by a preponderance of the evidence." 35 U.S.C. § 316(e); *see* 37 C.F.R. § 42.1(d) (2018).

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are "such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved based on underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations.[2] *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Additionally, the obviousness inquiry typically requires an analysis of "whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR*, 550 U.S. at 418 (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (requiring "articulated reasoning with some rational underpinning to support the legal conclusion of obviousness")); *see In re Warsaw Orthopedic, Inc.*, 832 F.3d 1327, 1333 (Fed. Cir. 2016) (citing *DyStar Textilfarben GmbH & Co. Deutschland KG v. C. H. Patrick Co.*, 464 F.3d 1356, 1360 (Fed. Cir. 2006)). "To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness."

[2] The record contains no evidence relating to secondary considerations.

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In re Magnum Oil Tools Int'l, Ltd., 829 F.3d 1364, 1380 (Fed. Cir. 2016).

We analyze the asserted grounds with the principles stated above in mind.

B. Level of Ordinary Skill in the Art

Petitioner proposes that a person of ordinary skill in the art would have had "at least a master's degree in Computer Science, Computer Engineering, or a related field, or hold a bachelor's degree in Computer Science, Computer Engineering, or equivalent and have at least two years of relevant work experience in the fields of UI [(user interface)] design and OSs." Pet. 10–11. In the Institution Decision, we preliminarily adopted Petitioner's proposed definition, noting that the prior art in this case demonstrated the level of ordinary skill in the art at the time of the invention. Inst. Dec. 9 (citing *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001)). Patent Owner does not comment on or dispute Petitioner's proposal, and instead cites *Okajima*'s holding regarding the level of skill in the prior art without raising any issues regarding whether the prior art here reflects a level of ordinary skill different from that proposed by Petitioner. PO Resp. 6 (citing *Okajima*, 261 F.3d at 1355). We adopt Petitioner's definition as consistent with the '102 patent and the asserted prior art.

C. Claim Construction

Petitioner and Patent Owner agree that the '102 patent is expired. Pet. 11; PO Resp. 7; *see also* Ex. 1001, code (22). "[T]he Board's review of the claims of an expired patent is similar to that of a district court's review." *In re Rambus Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012). In this context, claim terms generally are given their ordinary and customary meaning, as understood by a person of ordinary skill in the art, at the time of the

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invention, taking into consideration the language of the claims, the specification, and the prosecution history of record, because the expired claims are not subject to amendment. *Phillips v. AWH Corp*., 415 F.3d 1303, 1312–19 (Fed. Cir. 2005) (en banc).

Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999). The Petitioner proposed construction of several claim terms in the Petition. Pet. 12–18. However, none of these claim terms require construction to resolve the controversy. Petitioner also argued for a construction of an additional term ("wherein said specified content information further comprises information to be displayed on said display of said user's terminal") in its Reply. Pet. Reply 10–11 (emphasis omitted). Patent Owner contends that this argument is a new argument raised improperly for the first time in the Reply. PO Sur-Reply 10–11. We agree. Pursuant to 37 C.F.R. § 42.23(b), a reply "may only respond to arguments raised in the corresponding . . . patent owner response." *See also Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 775 (Fed. Cir. 2018) (concluding that the Board did not abuse its discretion in refusing to consider portions of a reply declaration "rais[ing] a new obviousness argument for [a claim] limitation that could have been made in the petition" but was not); *Intelligent Bio-Sys., Inc. v. Illumina Cambridge, Ltd.*, 821 F.3d 1359, 1369–70 (Fed. Cir. 2016) (concluding that the Board did not abuse its discretion in refusing to consider reply brief arguments advocating a "new theory" of unpatentability under 37 C.F.R. § 42.23(b)). Therefore, we will not consider the new construction proposed for this claim term.

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D. Alleged Obviousness of Claims 70–73 over Malamud and Anthias

Petitioner argues that claims 70–73 would have been obvious over a combination of Malamud and Anthias. Pet. 31–49. For the reasons discussed below, we determine that Petitioner has not demonstrated the unpatentability of claims 70 and 72 over Malamud and Anthias, but has demonstrated the unpatentability of claims 71 and 73 over Malamud and Anthias.

1. Overview of Malamud (Ex. 1004)

Malamud relates to information cursors for use in an operating system or application programs. Ex. 1004, code (57). "[An] information cursor includes a pointing portion to point to objects displayed on a video display and an information portion to display information about an object to which the pointing portion points." *Id.* One such information cursor is a "combined name and preview cursor," which is shown in Malamud's Figure 4, reproduced below:

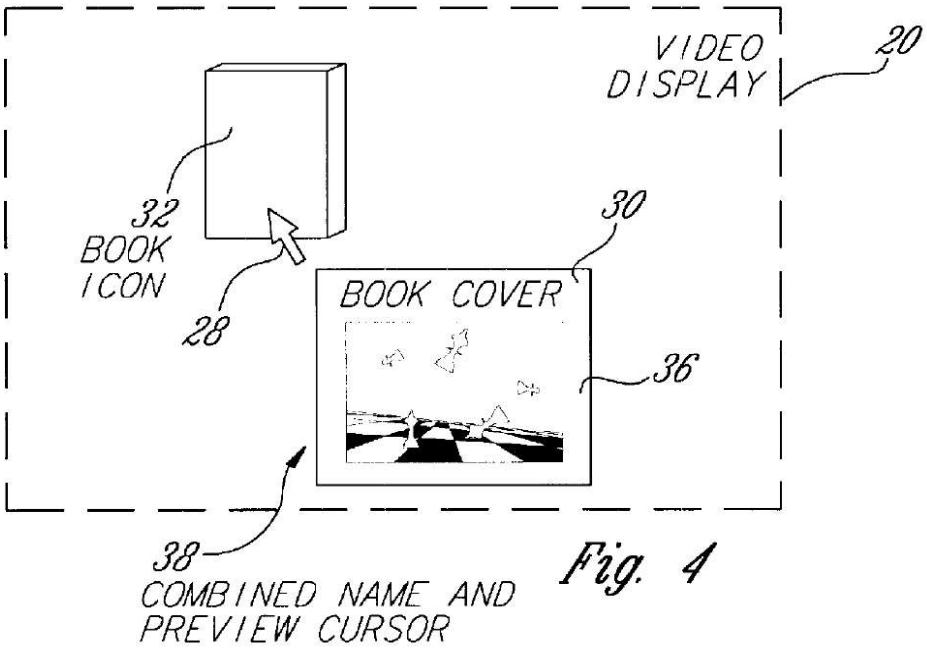


Fig. 4

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Figure 4 illustrates combined name and preview cursor 38 pointing to book icon 32. *Id.* at 4:4–18. Combined name and preview cursor 38 includes pointing portion 28 in the shape of an arrow pointing to book icon 32. *Id.* at 3:65–68, 4:4–6, 4:8–9. Preview portion also includes name box 30, which displays the name of the object the cursor is pointing to. *Id.* at 3:39–43, 4:9–13. Lastly, combined name and preview cursor 38 includes preview portion 36, which holds a preview of the contents of the object the cursor is pointing to. *Id.* at 4:14–18. Other cursors include only some of this information; a name cursor may include only the pointing portion and the name, and a preview cursor only the pointing portion and preview portion. *Id.* at 3:30–43, 3:59–4:3.

To implement the display of cursors, the OS of the terminal maintains a message queue for each program that generates windows, and when a mouse event occurs, such as positioning or a mouse click, a message from the OS is placed into the queue for the program. *Id.* at 4:56–5:9. The application program can respond by passing, to the OS, information for the cursor, e.g., a text string for a name box and a pointer to graphical information for a preview portion. *Id.* at 5:47–65.

2. Overview of Anthias (Ex. 1005)

Anthias relates to a distributed window presentation system in which graphics data, generated in a remote system, is displayed for a user. Ex. 1005, code (54), (57), 1:24–33. Anthias refers to the remote system as the client, and the user's system as the server presentation system. *Id.* 1:24–33. The remote system can associate a particular cursor type with a display area displayed at the user's system, and different cursors can be displayed in different parts of the display area. *Id.* at 4:16–23. For example, the cursor

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might change shape, color, or flashing frequency as it passes from the background window areas to an area associated with an application. *Id*. at 3:4–7, 4:21–23.

3. Claim 70

Petitioner argues that claim 70 would have been obvious over Malamud and Anthias. Pet. 31–44.

a. *Claim 70 [Preamble]: A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal*

Petitioner argues that Malamud's information cursor teaches the modification of a cursor to appear as a specific image having a desired shape and appearance, including an information portion, which is displayed on a user's terminal. Pet. 31–32 (citing Ex. 1004, 3:59–4:3; Ex. 1003 ¶ 116). Petitioner argues that a "server" and "remote user's terminal" are found in Anthias's teaching of a data processing system implemented with a client/server model, in which an application running on a remote system (denoted "client" in Anthias) controls a display on a terminal, including the use of a modified cursor in certain window areas. *Id.* at 32 (citing Ex. 1005, 1:24–33; Ex. 1003 ¶ 117).

Petitioner contends that one of ordinary skill would have combined Malamud and Anthias, as contemporary references each dealing with responding to a cursor location on a screen, in order to reduce storage requirements and processing overhead at the user terminal. *Id.* at 29–30, 32 (citing Ex. 1005, 2:30–34; Ex. 1003 ¶¶ 112, 117.)

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Patent Owner does not make any arguments specific to the preamble of claim 70 or directed to the propriety of the combination of Malamud and Anthias. *See, e.g.*, PO Resp. 8–17.

Generally, a preamble does not limit a claim. *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1346 (Fed. Cir. 2002). Here, we need not decide whether claim 70's preamble limits the claims because, whether the preamble is limiting or not, we agree with Petitioner that the combination of Malamud and Anthias teaches the preamble. Specifically, the combination of Anthias' teaching of a data processing system implemented with a client/server model, and Malamud's teaching regarding modification of a cursor displayed to a user, teaches or suggests this preamble. Ex. 1004, 3:59–4:3; Ex. 1005, 1:24–33; Ex. 1003 ¶¶ 116–118.

b. *Claim 70[a]: cursor image data corresponding to said specific image*

Petitioner argues that Malamud teaches limitation [a]. Pet. 35–36. Petitioner argues that Malamud discloses that the graphical preview portion of its information cursor is stored as a bitmap image. *Id.* (citing Ex. 1004, 5:16–18, 5:59–62; Ex. 1003 ¶ 122). Petitioner contends that the pointers to the bitmaps teach the cursor image data of limitation [a]. *Id.*

Patent Owner does not make any arguments specific to this limitation of claim 70. *See, e.g.*, PO Resp. 8–17.

We agree with Petitioner that Malamud teaches limitation [a] of claim 70. Specifically, Malamud teaches that appearance of cursors is dictated by bitmaps stored in an operating system, and that a pointer to a bitmap is used to identify which bitmap should be used for a cursor. Ex. 1004, 5:16–18, 5:59–62.

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c. *Claim 70[b]: cursor display code, said cursor display code operable to modify said cursor image*

Petitioner contends Malamud's conventional OS would be understood by a person of ordinary skill in the art to "use[] functions or applications to display and modify graphics" on the user interface including cursors. Pet. 36 (citing Ex. 1004, 3:6–8, 5:47–53, Fig. 6; Ex. 1003 ¶ 125). Petitioner specifically notes Malamud's discussion relating to how the cursor display is effectuated, in which a window procedure "passes a message to the operating system . . . that tells the operating system what type of cursor to display and sets forth the contents and type of information to be displayed in the cursor." *Id.* at 37 (quoting Ex. 1004, 5:49–52). Thus, Petitioner argues that Malamud's functions or applications in the OS that display the changeable information cursors teach the cursor display code operable to modify the cursor image. *Id.* at 36–37.

Patent Owner does not make any arguments specific to this limitation of claim 70. *See, e.g.*, PO Resp. 8–17.

We agree with Petitioner that one of ordinary skill in the art would have understood Malamud to teach or suggest limitation [b] of claim 70. Specifically, Malamud teaches messages passed to the operating system relating to the display of cursors with different content (e.g., name or preview cursors), and one of ordinary skill would have understood that code comprising functions or applications in the OS would be used to modify the cursor image. Ex. 1004, 5:16–18, 5:47–53; 5:59–62; Ex. 1003 ¶¶ 125–126.

d. *Claim 70[c.i]: a first server computer for transmitting specified content information to said remote user terminal*

Petitioner argues that the combination of Malamud and Anthias teaches limitation [c.i]. Pet. 37–38. In the Petition, Petitioner argues with respect to this limitation that:

> Malamud, in view of Anthias, discloses an application program's window procedure ("*first server computer*") and an OS ("*remote user terminal*") on a client-server network. Malamud discloses that an application program's window procedure ("*first server computer*") transmits a message ("*specified content information*") to the OS ("*remote user terminal*"), and the functions and applications it employs ("*cursor display code*") to display its information portion.

Id. (internal citations omitted) (citing Ex. 1004, 4:53–54, 5:53–57, Ex. 1003 ¶ 130). The cited portions of Malamud describe the OS's control over the windowing user interface, and describe the OS transmitting a message requesting that an information cursor be displayed. Ex. 1004, 4:53–54, 5:53–57. Petitioner's contention is that the limitation's "specified content information" is taught by Malamud's transmitted message, which is described in Malamud as a message that "tells the operating system what type of cursor to display and sets forth the contents and type of information to be displayed in the cursor." *Id.* at 5:49–52. Petitioner additionally identifies this message as the specified content information in arguments relating to limitation [c.ii] and [c.iii]. Pet. 38–41.

Our Decision on Institution noted the Petition's reliance on Malamud's message sent relating to a preview cursor to teach the "specified content information" of this claim limitation. Inst. Dec. 15–19. In the Reply, however, Petitioner argues that the "specified content information"

includes any information to be displayed on the client, such as "all information necessary to display [a] website" and, more broadly, "all graphics data." Pet. Reply 5–11. Petitioner argues that the Petition referred to the discussion of the preamble and the teachings of Anthias "for disclosure of the transmission of launch information, including underlying objects," and that the "*specified content information* would have included all of the information to be displayed on the *remote user terminal* on launch, including the objects over which cursors could later be moved and modified." *Id.* at 7; Tr. 10:4–15, 21:24–23:1, 25:2–27:17.

However, we agree with the Patent Owner that the Petition did not relate the "specified content information" broadly to all information transferred, but rather specifically to information in a message concerning the display of an information cursor. *See* PO Resp. 11 n.1, 13–14; PO Sur-Reply 2–3. While Petitioner argues that the reference to Anthias' teachings as addressed in the portion of the Petition relating to the preamble of claim 70 teaches the origination at a server of all graphics data, the Petition describes the "specified content information" as taught by the message relating to cursor display. Pet. 37–38. Even when describing Anthias' teachings, the Petition and the cited declaration describe the combination in terms of messages regarding the movement of a cursor and responsive messages regarding cursor display, not other information transferred between the remote system and the user's system. *Id.* at 32; Ex. 1003 ¶¶ 117–118.

A petitioner must choose which grounds of invalidity to assert in the petition and "the expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute." *See Intelligent*

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Bio-Sys., 821 F.3d at 1369; *Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc.*, 853 F.3d 1272, 1286 (Fed. Circ. 2017) (a petitioner is foreclosed from "shifting" in post-petition arguments to a new theory of *prima facie* obviousness based on a different passage of a prior art reference than was used in the petition); PTAB Consolidated Trial Practice Guide November 2019,[3] 73 ("Petitioner may not submit new evidence or argument in reply that it could have presented earlier, e.g., to make out a prima facie case of unpatentability."); Trial Practice Guide Update August 2018,[4] 14 (same).

Therefore, we evaluate Petitioner's arguments with respect to limitation [c.i] relying upon Malamud's message relating to a preview cursor to teach the "specified content information." Patent Owner does not make any arguments relating to whether Malamud's message, in view of the teachings of Anthias, teaches limitation [c.i] of claim 70. *See, e.g.*, PO Resp. 8–17.

We agree with Petitioner that the combination of Malamud and Anthias teaches limitation [c.i] of claim 70. Specifically, Malamud teaches the transmission of a message relating to the display of information cursors (e.g., name or preview cursors), and Anthias teaches or suggests the server/client configuration. Ex. 1004, 4:53–54, 5:53–57; Ex. 1005, 1:24–33; Ex. 1003 ¶¶ 117, 129–131.

[3] Available at https://www.uspto.gov/TrialPracticeGuideConsolidated

[4] Available at https://go.usa.gov/xU7GP

e. *Claim 70[c.ii]: said specified content information including at least one cursor display instruction indicating a location of said cursor image data, said cursor display instruction and said cursor display code operable to cause said user terminal to display a modified cursor image on said user's display in the shape and appearance of said specific image*

Petitioner, as discussed *supra*, argues that the "cursor image data" is taught by Malamud's preview portion of an information cursor, which is stored as a bitmap. Consistently, Petitioner contends that the pointer to the location of that bitmap for the preview portion, described by Malamud as being transmitted from the window procedure to the OS, teaches or suggests limitation [c.ii]'s "at least one cursor display instruction indicating a location of said cursor image data." Pet. 38–40 (citing Ex. 1004, 5:57–62; Ex. 1003 ¶ 136). Petitioner additionally notes that this pointer and the functions or applications in the OS (which Petitioner argues teaches cursor display code) operate together to cause the display of a modified cursor image including the preview portion. Pet. 38 (citing Ex. 1004, 3:6–8, 4:53–55, 5:47–57, Fig. 6; Ex. 1003 ¶ 134).

Patent Owner does not make any arguments specific to this limitation of claim 70. *See, e.g.*, PO Resp. 8–17.

We agree with Petitioner that Malamud teaches limitation [c.ii] of claim 70. Specifically, Malamud's disclosure that "if the cursor to be displayed is a preview cursor . . . a message . . . includ[ing] a pointer to a bitmap of graphical information that the operating system should use in the preview portion," teaches a cursor display instruction including a location of the cursor image data, and that instruction, along with the cursor display code, is used to cause the terminal to display a modified cursor. Ex. 1004

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5:57–62 (element number omitted); *see* Ex. 1004 3:6–8, 4:53–55, 5:47–57, Fig. 6; Ex. 1003 ¶¶ 134, 136.

f. *Claim 70[c.iii]: wherein said specified content information is transmitted to said remote user terminal by said first server computer responsive to a request from said user terminal for said specified content information, and wherein said specified content information further comprises information to be displayed on said display of said user's terminal*

Petitioner argues in the Petition, as detailed *supra* regarding limitations [c.i] and [c.ii], that the cursor-related message transmitted by a window procedure to the OS in Malamud teaches the transmission of specified content information. Consistent with those arguments, with respect to limitation [c.iii], Petitioner argues in the Petition that transmission is responsive to the use of the mouse to move a cursor position within a given window, which causes the OS to generate and send a message requesting that the program's window procedure send a message back identifying information regarding the cursor to be displayed. Pet. 40–41 (citing Ex. 1004, 5:7–10, 5:22–28). Petitioner contends that the movement of the cursor position teaches the request by the user terminal (OS) to the first server computer (window procedure) for content information. *Id.* Petitioner additionally notes that the message in Malamud transmitted by the window procedure to the OS also, in the case of a combined name and preview cursor, includes the name of the object the cursor is pointing to, to be displayed in the information cursor of Malamud. Pet. 40 (citing Ex. 1004, 4:4–17; Ex. 1003 ¶ 140.) Petitioner, thus, argues that the "information to be displayed on said display of said user's terminal" is taught or suggested by the name portion of the preview cursor. *Id.*

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In the Reply, consistent with its other reply arguments regarding "specified content information," Petitioner additionally argues that the "request from said user terminal for said specified content information" is taught by Malamud's UI program, which, when launched by a user, "sends the necessary information that the OS needs to render the associated window's contents." Pet. Reply 7–8 (citing Pet. 19–20; Ex. 1003 ¶¶ 97, 118, 129, 415–416; Ex. 1004, 4:53–65); Tr. 19:16–10:18. However, the argument presented in the Petition for this claim limitation is limited to the teachings of Malamud for display of a cursor and modifying or moving the cursor. Pet. 40–41. We will, therefore, not consider the argument in the Reply that the request for the contents of a window in Malamud teaches or suggests the request of limitation [c.iii]. *See Intelligent Bio-Sys.*, 821 F.3d at 1369; *Wasica Fin.,* 853 F.3d at 1286. Petitioner argues in its Reply that the object in Malamud is the claimed "information to be displayed," presenting examples from the Petition describing the operation of Malamud, e.g., to display "preview and name portions" of an information cursor when a user positions a cursor over an object displayed in a window. Pet. Reply 12–13 (citing Pet. 20, 30). However, while the Petition does describe the operation of Malamud more generally, the "information to be displayed" in the Petition is only argued to be taught by the name of the object "in the case of a combined name and preview cursor." Pet. 41.

Because we must evaluate only the arguments presented in the Petition, and not additional arguments from the Reply relating to other requests or information to be displayed, we only evaluate Petitioner's arguments with respect to limitation [c.iii] and the teachings of Malamud

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relating to a request from the user terminal for the message relating to a preview cursor. Pet. 40–41.

Patent Owner does not make any arguments relating to whether these teachings of Malamud, in view of the teachings of Anthias, teach or suggest limitation [c.iii] of claim 70. *See, e.g.*, PO Resp. 8–17.

We agree with Petitioner that the combination of Malamud and Anthias teaches limitation [c.iii] of claim 70. Specifically, Malamud teaches the request for and transmission of a message relating to the display of cursors with different content (e.g., name or preview cursors), and Anthias teaches or suggests the server/client configuration. Ex. 1004, 4:53–54, 5:7–10, 5:22–28; Ex. 1003 ¶ 140. Additionally, Malamud teaches that the request comprises "information to be displayed on said display of said user's terminal" in disclosing that the message includes information that will be displayed in the Malamud information cursor. Ex. 1004, 4:4–17, 5:54–62; Ex. 1003 ¶ 140.

> g. *Claim 70[c.iv]: said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal*

With respect to limitation [c.iv] of claim 70, Petitioner argues in the Petition that Malamud's OS functions and applications are used to display cursors "in their initial, standard forms[,] as well as any subsequent modifications." *Id.* at 42–43 (citing Ex. 1004, 5:59–62; Ex. 1003 ¶¶ 144–

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145.) Petitioner contends that Malamud's information cursors, when pointing to an object displayed on the screen, are modified so that the modified cursor's preview portion displays a preview of the contents of that object. Pet. 43 (citing Ex. 1004, 3:61–63).

In our Institution Decision, we noted that because the Petition relied on information to be displayed in Malamud's information cursor as teaching or suggesting "information to be displayed on said display of said user's terminal," the Petition did not establish sufficiently that Malamud teaches or suggests the claimed modification in the cursor image "in response to movement of said cursor image over a display of said at least a portion" of that information to be displayed. Inst. Dec. 18–19.

Patent Owner contends that the Petition's only argument with respect to the modification of a cursor "in response to movement of said cursor image over a display of said at least a portion of said information" is the statement that "[w]hen a preview cursor points to an object displayed on the screen, the cursor is modified so that the preview portion appears displaying graphical data depicting the object's contents." PO Resp. 14–16 (quoting Pet. 43). Patent Owner, therefore, argues that "none of Petitioner's argument explains how, when a cursor image is moved 'over a display of' any portion of the *information to be displayed*, the cursor image is modified as recited in" limitation [c.iv]. *Id.* at 15.

Consistent with the other arguments in the Petitioner's Reply, Petitioner argues that the "specified content information" of claim 70 includes Malamud's earlier transmitted launch data "including the objects over which cursors could later moved and modified." Pet. Reply 5–8, 12–14. However, this argument, that the "specified content information" is

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taught or suggested by data in Malamud and Anthias other than Malamud's information cursor message data, was not made in the Petition, and, thus, we do not consider it to be part of the case for unpatentability in the Petition.

Limitation [c.iv] of claim 70 requires that the cursor image is modified "[in] response to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal." Petitioner identified the information to be displayed in Malamud as contained in the cursor display message, but has not provided an explanation of how there is "movement of said cursor image" over such information.

In other words, Petitioner has not adequately demonstrated how Malamud (or Anthias) teaches or suggests this limitation because it has failed to explain how Malamud's cursor image could exhibit movement over itself. The modification in limitation [c.iv] occurs in response to movement of "said cursor image" over "a display of said at least a portion of said information to be displayed on said display of said user's terminal." Since the Malamud cursor display message teaches or suggests, according to the Petition, the "said information to be displayed on said display of said user's terminal," and that cursor display message is itself part of the Malamud information cursor (which is used to teach "said cursor image"), the movement described in this claim limitation would be taught only by movement of Malamud's information cursor over a portion of Malamud's information cursor. Pet. 36, 42; Ex. 1004, 2:30–33, 4:4–17, Fig. 4. Petitioner does not demonstrate how such movement would be taught or suggested by Malamud or the proposed combination. Thus, we do not find

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that the preponderance of the evidence supports Petitioner's contentions of unpatentability with respect to limitation [c.iv].

h. *Claim 70 – Conclusion*

On this record, we do not find that the preponderance of the evidence supports Petitioner's contentions of unpatentability with respect to the obviousness of claim 70 over the combination of Malamud and Anthias.

4. Claim 72

Claim 72 is independent, and Petitioner argues its unpatentability over Malamud and Anthias using similar logic and evidence as those provided for claim 70, including an argument relating to modifying a cursor "[in] response to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal," echoing the argument provided for corresponding limitations of claim 70. Pet. 44–49; *compare id.* at 47–48 *with id* at 41–43. Petitioner again argues with respect to claim 72 that the "specified content information" corresponds to the cursor messages in Malamud relating to new positions for the cursor and type of cursor to be displayed, not other information exchanged with the OS. *Id.* at 48 (citing Ex. 1004, 4:4–17, 5:54–62; Ex. 1003 ¶ 182).

For the same reasons described with respect to claim 70, the preponderance of the evidence does not support Petitioner's contention that claim 72 is unpatentable as obvious over Malamud and Anthias.

5. Claims 71 and 73

a. *Claim 71*

Petitioner contends that claim 71 is unpatentable for the same reasons provided for the unpatentability of claim 70. Pet. 44. However, claim 71

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recites modification of the cursor "responsive to movement of said cursor image over a specified location on said display of said user's terminal" and not, as in claim 70, responsive to movement "over a display of said at least a portion of said information to be displayed on said display of said user's terminal."

Petitioner's contentions regarding limitation [c.iv] of claim 71, in which the preview cursor is modified when the cursor is moved to point to an object displayed on the screen do not contain the same flaws noted with respect to claim 70. Petitioner argues that the functions and applications of the OS are used to display cursors "in their initial, standard forms[,] as well as any subsequent modifications." Pet. 42–43 (citing Ex. 1004, 5:59–62; Ex. 1003 ¶¶ 144–145.) Petitioner contends that Malamud's information cursors, when pointing to an object displayed on the screen, are modified so that the modified cursor's preview portion displays a preview of the contents of that object. *Id*. at 43 (citing Ex. 1004, 3:61–63).

Patent Owner does not make any arguments regarding the unpatentability of claim 71 over Malamud and Anthias. Tr. 50:25–51:5.

We agree with Petitioner that Malamud teaches limitation [c.iv] of claim 71. Malamud discloses an information cursor in which the cursor information is modified in response to movement over a specified location on the user's display. Ex. 1004, 5:59–62; Ex. 1003 ¶¶ 144–145. With respect to the other claim elements of claim 71, these are identical to those addressed *supra* with respect to claim 70, and we find in each instance that the combination of Malamud and Anthias teaches or suggests these limitations for the same reasons. Petitioner has, thus, shown by a

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preponderance of the evidence that claim 71 is unpatentable as obvious over Malamud and Anthias.

b. *Claim 73*

Claim 73 is an independent method claim, which Petitioner argues is unpatentable using similar logic and evidence as those provided for claims 70–72. Pet. 49.

Patent Owner does not make any arguments regarding the unpatentability of claim 73 over Malamud and Anthias. Tr. 50:25–51:5.

We agree with Petitioner that the steps of method claim 73 are taught or suggested in the combination of Malamud and Anthias described above with reference to claim 71. That is, in the context of a combination with the teachings of a client and server from Anthias, the step of receiving a request at a server is taught or suggested by the combination of Malamud's message sent when a cursor is moved within an application. The provision of the content information is taught or suggested by the provision in Malamud of a responsive cursor display message. That message, in Malamud, is provided to the user terminal to cause the transformation of the initial cursor image.

Petitioner has shown by a preponderance of the evidence that claim 73 is unpatentable as obvious over Malamud and Anthias.

E. Alleged Obviousness of Claims 70–73 over Baker and Anthias

Petitioner argues that claims 70–73 would have been obvious over a combination of Baker and Anthias. Pet. 49–61. For the reasons discussed below, we determine that Petitioner has not demonstrated the unpatentability of claims 70–73 over Baker and Anthias.

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1. Overview of Baker (Ex. 1007)

Baker describes an interface for accessing information, presented in a pictorial image with an overlaid animated character. Ex. 1007, code (57). Baker's animated character is responsive to an input device and "roughly corresponds to the cursor or pointer" in a "[w]indows, [i]cons, [m]enus, and [p]ointers" GUI (graphical user interface). *Id.* at 13:5–29, 2:35–38. Baker describes the cursor as a component of the animated character, and gives as an example the use of the foot of the animated character as the cursor. *Id.* at 13:24–29. Figure 3 of Baker, reproduced below, shows an animated character overlaid on a background image:



FIG. 3

In Figure 3, character 22, including pin 60, is drawn over an image 12. *Id.* at 20:65–21:6. Character 22 can be moved using arrow keys, or a

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command can be issued that will attach the pin to the image at the indicated location. *Id.*

Baker teaches that "[a] vendor or advertiser may define and configure a particular pictorial environment for use by a client where the pictures and objects represent the vendor's goods or services." *Id.* at 11:53–56. One possibility in such cases is the Baker animated character interacting with an icon on the screen, with both icon and character becoming part of a single animation. *Id.* at 13:13:49–51.

a. *Claim 70*

Petitioner argues that claim 70 would have been obvious over Baker and Anthias. Pet. 53–61.

(1) Claim 70 – Preamble and limitations [a] and [b]

With respect to the preamble, Petitioner argues that Baker's animated character teaches the cursor image, which is modified to a "specific image" when the animated character takes on a new position depending on the location of the cursor on screen. Pet. 49–50 (citing Ex. 1007, 13:12–13, 13:47–52, 21:6–8; Ex. 1003 ¶ 290).

Petitioner argues that a "server" and "remote user's terminal" are found in Anthias' teaching of a data processing system implemented with a client/server model, in which an application running on a remote system (denoted "client" in Anthias) controls a display on a terminal, including the use of a modified cursor in certain window areas. *Id.* at 50–51 (citing Ex. 1005, 1:24–33; Ex. 1003 ¶ 291). Petitioner contends that one of ordinary skill would have combined Baker and Anthias, as contemporary references each dealing with responding to a cursor location on a screen, in order to reduce storage requirements and processing overhead at the user

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terminal. *Id.* at 28–30, 50–51 (citing Ex. 1005, 2:30–34; Ex. 1003 ¶¶ 111–112, 291.)

With respect to limitation [a] of claim 70, Petitioner argues that Baker teaches storing information about the cursor's size and specific position in a "character_model list or array," and that such information is "cursor image data" as per limitation [a]. Pet. 52 (citing Ex. 1007, 23:1–29; Ex. 1003 ¶ 299). Additionally, Petitioner argues that Baker's character_model contains location information for animation frames for the animated cursor, which is also "cursor image data." *Id.* (citing Ex. 1007, 23:24–26; Ex. 1003 ¶ 299).

For limitation [b] of claim 70, Petitioner argues Baker would have been understood by a person of ordinary skill in the art to include the limitation's "functions or applications to display and modify graphics" on the user interface including cursors. Pet. 52–53 (citing Ex. 1007, 2:32–56; Ex. 1003 ¶ 303).

Patent Owner does not make any arguments relating to whether these teachings of Baker and Anthias teach or suggest the preamble or limitations [a] or [b] of claim 70. *See, e.g.*, PO Resp. 19–22.

We agree with Petitioner that the combination of Baker and Anthias teaches the preamble and limitations [a] and [b] of claim 70.

(2) Claim 70- limitations [c.i], [c.ii], [c.iii], and [c.iv]

Petitioner argues that the combination of Baker and Anthias teaches limitation [c.i] of claim 70, as Baker describes a pictorial UI system that, together with Anthias' distributed client/server architecture, would teach the first server computer transmitting information used to modify the animated character cursor. Pet. 53 (citing Ex. 1003 ¶¶ 308, 310). Petitioner, as

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discussed, argues that the "character_model" as taught in Baker includes location information for animation frames for the animated cursor. *Id*. at 52. In order to show how Baker teaches or suggests the transmission (as required in limitation [c.i]) by a first server computer of specified content, including (as required in limitation [c.ii]) a location of said cursor image data, Petitioner contends that Baker's "character_model" is provided to the OS by the pictorial UI. Pet. 53 (citing Ex. 1007, Appendix E; Ex. 1003 ¶ 310). Petitioner additionally notes that information in character_model is provided to the OS to execute cursor animations. Pet. 57–58 (citing Ex. 1007, Abstract, 23:1–29; Ex. 1003 ¶ 316).

Petitioner's citation to Baker for the contention that the "character_model" data structure is requested from the pictorial UI is to Appendix E of Baker. *Id.* at 54. Appendix E is 39 pages, and it is unclear where in Appendix E Baker teaches or suggests a request by an OS for the character_model data structure from the pictorial UI. Ex. 1007, cols. 117–194. Appendix E provides a list of "internal procedures," which are used to implement the system functions, along with procedure prototype and a description of the procedure. *Id.* at 31:48–56. Petitioner also relies on the transmission of "character_model" as part of the specified content information to teach or suggest limitation [c.iii]. Pet. 55–56.

Patent Owner argues that the Petition does not point to sufficient evidence in Baker for the transmission of the "character_model" data structure from the pictorial UI (which Petitioner argues teaches the first server computer) as required by claim 70. PO Resp. 21. Patent Owner further argues that the cited Appendix E lists internal procedures used to implement system functions and actions, but that Petitioner did not identify

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which of the procedures teaches or suggests a request from the pictoral UI for the character_model data structure. *Id.* at 21–22. Generally, Petitioner, in reply, argues that the Petition cited a portion of Dr. Bederson's declaration describing transmission of the information in the character_model in Baker from the pictorial UI to the OS in the play_animation procedure. Pet. Reply 14 (citing Inst. Dec. 27). Dr. Bederson's declaration does describe the play_animation procedure as "read[ing] and updat[ing] the character_model when modifying the location, size, and appearance of the animated character cursor." Ex. 1003 ¶ 315; *see also* Pet. 54 (substantially similar language).

However, even were we to credit Petitioner's argument that the play_animation procedure was sufficiently identified in the Petition as the portion of Baker that teaches or suggests the transmission of specified content information, no description is provided relating to which portion of the Baker system utilizes these functions, including play_animation. While the Petition describes play_animation as a function that "reads and updates" character_model, this does not describe transmission of character_model from the pictorial UI to the OS as required by the Petitioner's other arguments regarding the teachings of Baker, and by limitation [c.iii] of claim 70. Given the gaps in Petitioner's arguments and evidence relating to character_model, Petitioner has not met the burden of demonstrating unpatentability.

Given these deficiencies with respect to Petitioner's theory of unpatentability with respect to limitation [c.iii], we do not find that the preponderance of the evidence supports Petitioner's contentions of

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unpatentability with respect to the obviousness of claim 70 over the combination of Baker and Anthias.

b. *Claims 71–73*

Claim 71 is argued on the same basis as claim 70. Pet. 59. Claim 72 is argued on similar grounds as claim 70. *Id.* at 59–61. Claim 73 is argued on the same basis as claim 72. *Id.* at 61. For the same reasons described with respect to claim 70, the preponderance of the evidence does not support Petitioner's contention that claims 71–73 are unpatentable as obvious over Baker and Anthias.

IV. CONCLUSION[5]

Based on the evidence presented with the Petition, the evidence introduced during the trial, and the parties' respective arguments, Petitioner has shown by a preponderance of the evidence that claims 71 and 73 are unpatentable under § 103(a) as obvious over Malamud and Anthias. However, Petitioner has not shown by a preponderance of the evidence that any other claims are unpatentable on the grounds advanced in the Petition, as discussed above and set forth in the chart below.

In summary:

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[5] Should Patent Owner wish to pursue amendment of the challenged claims in a reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
70–73	103(a)	Malamud, Anthias	71, 73	70, 72
70–73	103(a)	Baker, Anthias		70–73
Overall Outcome			71, 73	70, 72

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 70 and 72 of the ’102 patent are not determined to be unpatentable;

ORDERED that claims 71 and 73 of the ’102 patent are determined to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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Exhibit D

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

LEXOS MEDIA IP. LLC **v.** **AMAZON.COM, INC.**	**Civil Action No.: 2:22-CV-00169-JRG** **(Lead Case)**

REBUTTAL REPORT OF DR. MICHAEL SHAMOS, PH.D., J.D TO DR. LOREN TERVEEN'S REPORT CONCERNING THE VALIDITY OF U.S. PATENT NOS. 5,995,102, 6,118,449, AND 7,975,241

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I. INTRODUCTION

1. My name is Michael Ian Shamos.

2. I have been retained by Plaintiff Lexos Media IP, LLC ("LEXOS") to offer my opinion whether of claim 72 of U.S. Patent 5,995,102 (the "'102 Patent"), claims 1, 38, and 53 of U.S. Patent 6,119,449 (the "'449 Patent"), and claim 35 of U.S. Patent 7,975,241 (the "'241 Patent") (collectively, the "Asserted Claims") are valid over the asserted Prior Art, and to respond to other invalidity assertions presented by Amazon.com, Inc., Office Depot, LLC, and Target Corporation (collectively, "Defendants") in separate reports directed to each defendant.

3. More specifically, I have been retained to respond to each "Opening Expert Report of Dr. Loren Terveen," dated October 3, 2023 ("Terveen Report") and the "Opening Expert Report of Mr. Richard M. Goodin Regarding Invalidity of U.S. Patent Nos. 5,995,102, 6,118,449 and 7,975,241," also dated October 3, 2023 ("Goodin Report")..

4. I am being compensated at my usual consulting rate of $600 per hour for my work related to this matter. My compensation does not depend on the contents of this report, any testimony I may provide, or the ultimate outcome of this matter. I do not have any direct financial interest in Plaintiff. It is conceivable that I may own mutual funds or investment accounts which themselves own shares of one or more Defendants. However, any such holdings collectively would not constitute a material portion of my net worth.

5. I reserve the right to supplement and/or amend my opinions in this report based on future positions taken by Defendants, their experts, additional documents, testimony, or other information provided by Defendants or their witnesses, any orders from the Court, or as otherwise necessary.

6. My opinions and the bases for my opinions are provided in this Report and Exhibits attached hereto. If I am called as a witness in the above-captioned litigation, I expect that I

will testify at trial regarding the matters expressed in this Report and any supplemental reports or declarations that I may prepare in connection with this litigation. I may also discuss work and publications in the field, and knowledge of the state of the art in the relevant time period. I may rely on handbooks, textbooks, technical literature, and the like to demonstrate the state of the art in the relevant time period and the evolution of relevant technologies. I expect that I may also testify to additional matters. These include, for example, matters addressed by the Defendants' experts or by their counsel.

7. When I say I "understand" a fact to be true or make a factual statement without a documentary citation that means I have been informed by counsel for Plaintiff that Plaintiff will provide proof at trial of such fact through admitted evidence. When I say that I "understand" a particular principle of law to be applicable, that means I have been informed by counsel for Plaintiff that I am to apply such principle of law.

8. In connection with my anticipated testimony, I may use as exhibits various documents produced in this case or publicly available that refer or relate to the matters discussed in this Report. I have not yet selected the particular exhibits that might be used.

9. In addition, I may create or assist in the creation of demonstrative evidence to assist me in testifying. For instance, at trial I may rely on software cited in this Report or compiled versions of related source code in order to illustrate the relevant functionality of those programs and aid the jury in their understanding of those programs. I may prepare static and/or animated exhibits that demonstrate Defendants' websites or show a video depicting their use. I may also rely on screen shots or documents to generate demonstratives showing how such websites operate. The Asserted Patents relate to certain technology, and I may prepare demonstrative exhibits describing how that technology operates.

10. I currently hold the title of Distinguished Career Professor in the School of Computer Science at Carnegie Mellon University in Pittsburgh, Pennsylvania. I am a member of two departments in that School, the Software and Societal Systems Department and the Language Technologies Institute. I was a founder and Co-Director of the Institute for eCommerce at Carnegie Mellon from 1998-2004 and from 2004-2018 was Director of the eBusiness Technology graduate program in the Carnegie Mellon University School of Computer Science. Since 2018, I have been Director of the M.S. in Artificial Intelligence and Innovation degree program at Carnegie Mellon.

11. I received an A.B. (1968) from Princeton University in Physics; an M.A. (1970) from Vassar College in Physics; an M.S. (1972) from American University in Technology of Management, a field that covers quantitative tools used in managing organizations, such as statistics, operations research and cost-benefit analysis; an M.S. (1973), and M.Phil. (1974) and a Ph.D. from Yale University in Computer Science; and a J.D. (1981) from Duquesne University.

12. I have taught graduate courses at Carnegie Mellon in Electronic Commerce, including eCommerce Technology, Electronic Payment Systems, Electronic Voting, Internet of Things, Electronic Payment Systems and eCommerce Law and Regulation, as well as Analysis of Algorithms. Since 2007 I have taught an annual course in Law of Computer Technology. I currently also teach Artificial Intelligence and Future Markets.

13. I am the author and lecturer in a 24-hour video course on Internet protocols and have taught computer networking, wireless communication, and Internet architecture since 1999.

14. From 2001-2021, I was a Visiting Professor at the University of Hong Kong, where

I teach an annual course in Electronic Payment Systems. This is one of only a handful of graduate courses taught on this subject in the world.

15. From 1979-1987 I was the founder and president of two computer software development companies in Pittsburgh, Pennsylvania, Unilogic, Ltd. and Lexeme Corporation.

16. I am an attorney admitted to practice in Pennsylvania and have been admitted to the Bar of the U.S. Patent and Trademark Office since 1981. I have not been asked to offer any opinions on patent law in this proceeding.

17. I am a named co-inventor on the following six issued patents relating to electronic commerce: U.S. Patent Nos. 7,330,839, 7,421,278, 7,747,465, 8,195,197, 8,280,773, and 9,456,299.

18. I have previously served as an expert in over 370 cases concerning computer technology. In particular, I have been involved in multiple cases involving Internet technology and delivery of content over the Internet. A current copy of my curriculum vitae setting forth details of my background and relevant experience, including a full list of my relevant publications and a listing of cases for which I have provided expert testimony is attached hereto as Exhibit A.

19. In performing my analysis I have relied upon the materials listed in Exhibit B.

II. SUMMARY OF OPINIONS

20. My opinions are set forth in the body of this Report and in the Exhibits that I have prepared and attached to this Report. Without intending to limit in any way the opinions expressed in this Report, following is a summary of my opinions.

21. The Asserted Claims are not invalid for any of the reasons asserted by Dr. Terveen.

22. The Asserted Claims are not invalid for obviousness in view of Malamud.

23. The Asserted Claims are not anticipated by the Adveractive Games.

24. The Asserted Claims are not invalid for obviousness over the Adveractive Games in view of the knowledge of a POSITA.

25. The Asserted Claims are not invalid for obviousness over the Cosmic Bowling Adveractive Game in view of the knowledge of a POSITA and Malamud.

26. The Asserted Claims are not invalid for obviousness over Nielson and Malamud.

27. Claim 35 of the '241 Patent is not anticipated by the '102 Patent.

28. Claim 35 of the '241 Patent is not invalid for obviousness in view of Hama.

29. The Asserted Claims are not invalid for obviousness in view of Kojima.

30. Claim 35 of the '241 Patent is not invalid for obviousness in view of Rakavy.

31. Claim 35 of the '241 Patent is not invalid for obviousness-type double patenting.

III. OVERVIEW OF THE ASSERTED PATENTS

A. '102 Patent

32. The '102 Patent is entitled "Server System and Method for Modifying a Cursor Image." It was filed on June 25, 1997.

33. The '102 Patent relates generally to computer display cursors. More specifically, the invention discloses sending code from a server to a client to modify the appearance of a display cursor on the client.

34. The '102 Patent names James Samuel Rosen, Thomas A. Schmitter, and Mark S. Hall as the inventors. The records of the United States Patent and Trademark Office ("PTO") show that the patent was assigned to Plaintiff by an instrument executed on January 15, 2013 and recorded in the PTO on March 19, 2013.

35. The '102 Patent expired on June 25, 2017.

B. '449 Patent

36. The '449 Patent is entitled "Server System and Method for Modifying a Cursor Image." It was filed on September 21, 1999 as a continuation of the application that became the '102 Patent and was therefore effectively filed on June 25, 1997.

37. The '449 Patent shares the same specification as the '102 Patent, so it relates to the same field.

38. The '449 Patent also names James Samuel Rosen, Thomas A. Schmitter, and Mark S. Hall as the inventors. The records of the PTO show that the patent was assigned to Plaintiff by an instrument executed on January 15, 2013 and recorded in the PTO on March 19, 2013.

39. Because of the terminal disclaimer, the '449 Patent expired on the same day as the '102 Patent, that is, June 25, 2017.

C. '241 Patent

40. The '241 Patent is entitled "System for Replacing a Cursor Image in Connection with Displaying the Contents of a Webpage." It was filed on January 21, 2005 and published on September 29, 2005.

41. The '241 Patent names James Samuel Rosen, Thomas A. Schmitter, and Mark S. Hall as the inventors. The records of the PTO show that the patent was assigned to Plaintiff by an instrument executed on January 15, 2013 and recorded in the PTO on March 19, 2013.

42. The '241 Patent issued on July 5, 2011. The '241 Patent term was extended by 1175 days. It expired on September 12, 2020.

43. Dr. Terveen states that he "understand[s] June 21, 2005 to be the priority date for the '241 patent." Terveen Rpt. at ¶ 86. I understand this is currently the subject of Amazon's Motion for Summary Judgement. I understand the '241 Patent to claim priority to the '102

Patent, making its priority date June 25, 1997. I further understand that there is a dispute between the parties of the significance of a claim of priority that appears in the prosecution history of the '241 Patent but does not appear in the printed patent itself, which I understand to be a matter of law.

D. Brief Overview of the Common Specification[1]

44. The Asserted Patents in this consolidated litigation are: (1) U.S. Patent No. 5,994,102 (the '102 Patent), (2) U.S. Patent No. 6,118,449 (the '449 Patent), both of which are entitled "Server System and Method of Modifying a Cursor Image," and (3) U.S. Patent No. 7,975,241 (the '241 Patent), entitled "System for Replacing a Cursor Image In Connection with Displaying the Contents of a Webpage". Each of the Asserted Patents shares the same specification ("Common Specification"). The application for the '102 Patent was filed on June 25, 1997. For ease of reference, patent citations to the Common Specification will be with reference to the column and line numbering of the '102 Patent.

45. At the time of the invention, more and more companies were advertising on the Internet. '102 Patent, 1:21-23. Three typical forms of advertising at the time of the invention were "banner ads," 1:24-25, "frames," 1:55-56, and "self-appearing windows." 2:4-5. Each form of advertising had its drawbacks and limitations, as explained in the specification. 1:24-2:32. Consequently, the inventors recognized "a need for a simple means to deliver advertising elements . . . without the annoyance of totally interrupting and intrusive content delivery, and without the passiveness of ordinary banner and frame advertisements which can be easily ignored." 2:27-32. Thus, it was a specific objective of the inventions

[1] All column and line number citations are to the '102 Patent.

"to provide a server system for modifying a cursor image to a specific image displayed on a video monitor of a remote user's terminal for the purposes of providing on-screen advertising." 2:44-47.

46. The claimed inventions provide for server systems that enable a cursor or pointer displayed on a remote client's computer to change its appearance to a "specific image" that is representative of the content being displayed on that client computer. 4:4-12. The modified cursor image can be used by the provider of displayed web content to advertise or promote the displayed content. 3:51-4:3. As the Common Specification explains, "[t]he present invention provides a means for enabling cursors and pointers to change color, shape, appearance, make sounds, display animation, etc., when the user's terminal or computer, known as the 'client' or 'user' terminal, which has a network connection, receives certain instructions from a remote or 'server' computer attached to the network." 3:51-57.

47. The Common Specification describes "an exemplary embodiment of the present invention" whereby:

> [T]he generic cursor or pointer icons used in many networking applications, such as black arrows, hands with a pointing finger, spinning wheels, hourglasses, wristwatches, and others, will change appearance, and in some cases may incorporate sound or animation, in a way that is linked and related to the content, such as a webpage, which is being transmitted to and displayed on the client computer.

'102 Patent, 3:57-64.

48. "The cursor or pointer image may also appear in a specified shape or color that is intended to convey a message that relates to the advertising content within the webpage being transmitted and displayed." 3:67-4:3. *See also* 7:2-5 ("the server system provides certain information that causes the cursor image on the video monitor of the user terminal to display an image as specified by the server system.").

49. The invention relates to a graphical user interface in which a pointing device is used by the user to navigate a video display, and in which movement of the pointing device is indicated by a corresponding movement of a cursor on the video display. 8:24–37. The '102 Patent relates to changing that generic cursor by sending data and control signals from a remote computer to replace such a cursor with a cursor having an shape and appearance that is associated with other content being displayed to the user, e.g., a logo, mascot, or an image of a product or service, related to the other content being displayed to the user. 3:4–9, 17:5–18:3.

50. Figure 8 of the Common Specification, reproduced below, shows a webpage according to the invention.

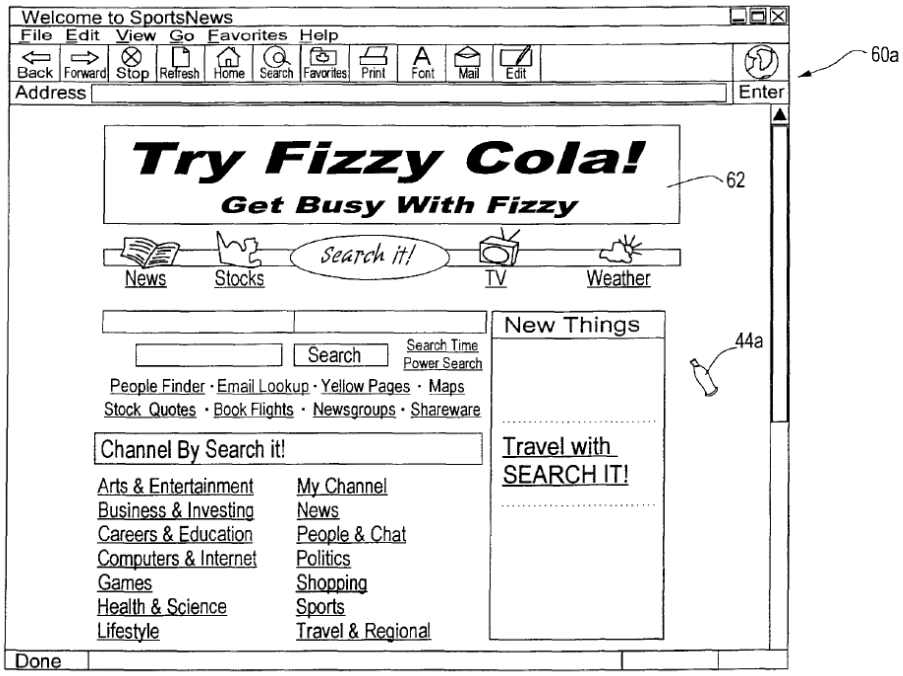


FIG. 8

51. In Figure 8, shown above, webpage 60a is displayed to a user, including banner ad 62 for cola. *Id.* at 13:31–37. The cursor on this webpage changes from a standard cursor (e.g., an arrow) to cola-bottle-shaped cursor 44a, which is associated with banner ad 62. *Id.* The '102 Patent describes interactions between a server system and a user's terminal to effect the

cursor change. *Id.* at 4:4–9, 5:37–49, 5:48–65, 7:16–40. The user terminal is controlled by an operating system ("OS"), and application programs, such as a browser running on the user terminal, use an application programming interface ("API") to interface with the OS. *Id.* at 7:29-40, Fig. 2.

52. The server system transmits specified content information to the user terminal, including information to be displayed on the user's computer (such as a hypertext markup language ("HTML") webpage), cursor display instructions, and cursor display code. 8:4–23. The cursor display instructions indicate where the cursor image data corresponding to the new appearance of the cursor resides. 8:49–64. The cursor display code causes the user's terminal to display cursor image data in place of the original cursor, using the API of the operating system to effect these changes. 8:34–37, 8:52–57; 13:19–30.

53. As extensively described in the Common Specification, *e.g.* 7:41-14:64, when a browser requests a webpage from a server, it receives back an HTML file that includes content to displayed and/or pointers thereto, formatting instructions on how to display the content, and instructions and/or code specifying how the webpage is to interact with the user, including how the cursor modification takes place and specific images are displayed. The browser then uses the received information to generate the webpage displayed to the user, including the shape and appearance of the modified cursor image.

54. As the Common Specification also describes, the content of the specific image may be dynamically updated and may also change based upon cursor movement, according, e.g., to changes in its position or speed. 14:49-53 ("…it is possible to vary the modification to the cursor as a function of cursor position. For example, the cursor pointer could be controlled such that it 'points' to a specific location on the screen regardless of the cursor's location on

the screen as illustrated in line 214 of FIG 4."); 14:54-64 ("In accordance with another embodiment of the invention it is possible to vary the modification to the cursor as a function of cursor velocity. For example, the cursor image could change from a stationary bird to a bird with flapping wings only when the cursor is moved quickly across the screen as illustrated in line 215 of FIG. 4."); 17:17-21 ("A dynamic cursor image could then be used to show a person holding a straw in such a way that the straw always points from the user toward the top of the Fizzy bottle, no matter where the cursor moves on the screen."); 17:55-61 ("It may also be desirable in certain cases to put alphanumeric data in the cursor 'space' to convey information to users, such as stock prices, baseball game scores, the temperature in Florida, etc. The data can be static, semi-static (i.e. updated periodically), or dynamic (updated frequently -- possibly incorporating available streaming-data and data compression technologies.")

E. Benefits of the Patents

55. In this analysis, I focus specifically on the benefits of the 5,995,102, 6,118,449 and 7,975,241 patents to Internet retailers, not on their general benefits.

56. The Patents claim various systems and methods that address problems in online advertising, namely that banner ads are easily ignored (1:41-54), webpage frames cause cramping and reduced content space (1:55-2:3), and pop-up windows are easily obscured, closed or ignored (2:4-26). The patents solve these problems via objectives described at 2:37-3:50.

57. The inventors recognized that content associated with a cursor is not easily ignored because the cursor is a user's pointing device and the user's eyes tend to follow the cursor. A basic idea of the inventions is to change the appearance of the cursor based on the content it is pointing to. 3:51-4:3. The change in appearance can alter the size, shape, color, text or image associated with the cursor.

58. Major outlets for Internet advertising are product webpages of Internet retailers, such as Defendants. An objective of a product page is to induce the viewer to buy the product. This was commonly done by providing color images of the product, textual descriptions, product specifications, and customer testimonials. Of these, images are the most captivating and effective because customers are reluctant to buy a product they have not been able to view.

59. It was known to allow a user to click on an image to view a magnified image of the product, then click again to restore the image to its original size. This is useful but somewhat clumsy, as it involves a lot of mouse clicking. The inventors provide this solution: mere movement of the mouse over a portion of page content results in an image associated with that content to be displayed along with the cursor as the cursor moves. 9:1-20. In this way, the user can move the cursor over an image of a product and view, for example, an expanded image of the relevant portion of the product as an associated image.

60. This cursor modification invention is very effective, as can be seen by the layperson viewing a Defendant's webpage.

61. Thus, the Asserted Patents disclose and enable systems and methods in which cursor images are dynamically modified for promotional and advertising purposes. In the '102 and '449 Patents, the specific shape and appearance of the modified cursor image corresponds to other content being displayed on the webpage to promote that content. In the '241 patent, the modified cursor image includes a dynamic visual image that tracks movement. The various examples disclosed in the Patents of promotional cursors include images that dynamically update with the cursors' movements, including associated images that are not integrated with the modified cursor image but which also track a movement.

IV. LEGAL PRINCIPLES AND STANDARDS

62. I have been informed by counsel for Plaintiff that the following principles of law are applicable to this matter, and I have applied these principles in my analysis.

63. I understand that a patent may be granted for any "new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof…" 35 U.S.C. § 101.

64. I understand that the claims of an issued U.S. Patent are presumed to be valid and enforceable. I understand that this presumption applies despite Defendants' invalidity theories, including anticipation, obviousness and other assertions of invalidity.

65. I understand that the party challenging the validity of a claim of an issued United States patent bears the burden of proof by clear and convincing evidence to demonstrate that such claim is invalid.

66. I understand that a patent must contain a written description of the subject matter claimed in the patent. To satisfy the written description requirement, the patent must describe the invention with reasonable clarity to convey to those skilled in the art that the inventor was in possession of the invention as of the date the application was filed. The written description requirement is evaluated as of the date the application for the patent was filed.

67. I understand that, in order to anticipate an invention, a prior art reference must be enabling to one of ordinary skill in the art. I understand that to prove that a patent is invalid for lack of enablement, one must show that the patent does not contain a description of the claimed invention that, at the time the patent application was filed, would have enabled a person of ordinary skill in the art to make and use the invention without undue experimentation.

68. I understand that a patent is enabling if a person of ordinary skill in the field could make and use the invention without having to do excessive experimentation. In determining

whether excessive experimentation is required, a number of factors can be considered: the scope of the claimed invention; the level of ordinary skill in the field; the amount of guidance presented in the patent; the amount of experimentation necessary; the time and cost of any necessary experimentation; how routine any necessary experimentation is; and whether the patent discloses specific working examples of the claimed invention.

69. I understand that an application for a patent may claim priority to an earlier filed application. 35 U.S.C. § 120. The effective priority date is important to determining whether or not a reference constitutes prior art. Art that comes after the priority date is not considered prior art for purposes of evaluating novelty or nonobviousness. 35 U.S.C. §§ 102, 103.

70. I have been advised that 35 U.S.C. § 101 defines patent-eligible subject matter to include "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."

71. I have been advised that, because the presumption of validity applies to patent eligibility, Defendant bears the burden of proving ineligibility by clear and convincing evidence.

72. I have been advised that, traditionally, courts have interpreted § 101 broadly to include "anything under the sun that is made by man." However, I have also been advised that the Supreme Court has narrowly recognized three specific exceptions to § 101's broad patent-eligibility principles: i.e., "laws of nature, physical phenomena, and abstract ideas."

73. I have been advised that, in *Alice Corp. Pty. Ltd. v. CLS Bank Int'l,* 34 S. Ct. 2347 (2014) and *Mayo Collaborative Services v. Prometheus Laboratories, Inc.* 132 S. Ct. 1289 (2012), the Supreme Court established a two-part test to determine whether a claim is patent-eligible. I understand that this test is referred to as the *"Alice* test."

74. I have been advised that, in Step One of the *Alice* test, the court must determine whether the claims are "directed to" a patent-ineligible concept - here, an "abstract idea." I have been advised that, if the Court determines that the claims are not "directed to" an abstract idea in Step One, the inquiry ends, and the claims are held to be patent-eligible.

75. I have been advised that, in determining whether the claims are "directed to" an abstract idea, the court must consider all the language of each claim, as properly construed. I have been advised that the abstract-idea's exception does not apply if the claimed invention "solves a technological problem in conventional industry practice," "improves an existing technological process," or "effect[s] an improvement in any other technology or technical field."

76. I have been advised that, according to a recent Federal Circuit case, the "relevant inquiry" under *Alice* Step One is "whether the claims focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea." I have been advised that, if a claim recites a mere desired "result or effect," it may be ineligible as "abstract;" but, if it recites the "specific means or method" that achieves the result or effect, it is not abstract.

77. I have been advised that, if a claim is found to be "directed to" an abstract idea in Step One, the inquiry proceeds to Step Two. I have been advised that, in Step Two, courts conduct a search for an "inventive concept" - *i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to "significantly more" than a patent upon the ineligible concept itself. I have been advised that, in this step, the court must consider all the elements of each claim, both individually and "as an ordered combination," to determine whether the claim elements transform the nature of the claim into a patent-eligible

"application" of the abstract idea, rather than a mere recitation of the abstract idea itself.

78. I have been advised that Step Two of the *Alice* test is satisfied when the claim elements, alone or in combination, recite more than "well-understood, routine, conventional activities." I have been advised that whether a particular claim element, or combination of elements, represents "well-understood, routine, conventional activities" is a question of fact. I have been advised that Defendants bear the burden of proving that the claims recite "well-understood, routine, conventional activity" by clear and convincing evidence.

79. I understand that a prior art reference anticipates a claim only if it, and it alone, discloses each and every limitation of the claim (as properly construed) at issue. In other words, every limitation of a claim must identically appear in a single prior art reference, arranged as in the claim.

80. Section 102 defines what qualifies as prior art for the purposes of an anticipation analysis as well as a non-obviousness analysis under 35 U.S.C. § 103.

81. I understand that, to invalidate a claim, a reference must be prior art to the claim and that the defendant has the burden to prove that a reference meets the requirements to qualify as prior art.

82. I understand that, in order to be considered a "printed publication," a document must be generally available—that is, available to the public without restriction. I have been informed that the dissemination and public accessibility of a document are the keys to the legal determination whether or not that document was "published" and hence can serve as prior art to a patent.

83. I understand that a patent claim cannot be invalidated based on one person's testimony alone without corroborating evidence, particularly documentary evidence.

Moreover, I understand that corroboration is required of any witness whose testimony alone is asserted to invalidate a patent claim, regardless of his or her level of interest in relation to that patent.

84. I understand that a claim is invalid if the claimed invention (pre- AIA) was known or used by others in the U.S. before the applicant's date of invention. I understand that a claim is invalid if the invention was patented or published anywhere, or was in public use, on sale, or offered for sale in this country, more than one year prior to the filing date of the patent application. I understand that a claim is invalid if the invention described by that claim was described in a U.S. patent granted on an application for a patent by another that was filed in the U.S. before the date of invention for that claim.

85. I understand that for a reference, other than a patent, to constitute prior art under § 102(a), the reference must have been published before the invention by the applicant for the patent. I understand that, for a system to constitute prior art under § 102(a), the system must have been known or used by others in the United States before the invention by the applicant for the patent.

86. I understand that prior use under § 102(a) must be of a complete product or process actually reduced to practice. An experiment that falls short of reduction to practice or is abandoned is not sufficient. I understand that the prior use must be accessible to the public. A use under conditions of secrecy is not sufficient. I understand that a prior use must be established by clear and convincing evidence and that oral testimony as to a prior use must normally be corroborated by other evidence.

87. I understand that prior knowledge under § 102(a) must consist of a complete and adequate description of the product or process that is available to the public. I understand that

private or secret knowledge will not anticipate or constitute prior art.

88. I understand that, for a reference, other than a patent, to constitute prior art under § 102(b), the reference must have been published more than one year before the date of the application for the patent in the United States. I understand that, for a system to constitute prior art under § 102(b), the system must have been in public use or on sale in the United States more than one year prior to the date of the application for the patent in the United States.

89. I understand that public use under § 102(b) includes any use of the invention by a person other than the inventor who is under no limitation, restriction, or obligation of secrecy to the inventor. I understand that a secret use by persons other than the inventor does not constitute a statutory bar under § 102(b).

90. I understand that the inventor's own public disclosure of his invention more than one year prior to filing of the patent application can also invalidate his patent under § 102(b).

91. I understand that a claimed invention is unpatentable if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. 35 U.S.C. § 103.

92. I understand that the factual analysis relevant to obviousness requires that the following four inquiries be made: (1) the scope and content of the prior art are to be determined; (2) the differences between the prior art and the claims at issue are to be ascertained; (3) the level of ordinary skill in the art are resolved; and (4) objective indicia of obviousness or nonobviousness, which include "secondary considerations" such as the commercial success of the invention, long felt but unsolved needs, unexpected results, and the failure of others to arrive at the invention, are to be considered. I understand that these four

factors are sometimes referred to as the *Graham* factors.

93. I understand that mere identification in the prior art of each component of a claimed system does not show that the claim as a whole would have been obvious.

94. I understand that obviousness can be based on a combination of multiple prior art references. I also understand that a claim can be obvious in light of a single reference, without the need to combine references, if the elements of the claim that are not found explicitly or inherently in the single reference, if the missing limitation(s) can be supplied by the knowledge of one skilled in the art, including the common sense of one of skill in the art. I also understand that "hindsight reconstruction" cannot be used to combine references together to reach a conclusion of obviousness. However, where only a single reference is combined with the "common sense" knowledge of one skilled in the art, a reasoned analysis and evidentiary support is required as opposed to a bare assertion, as will be discussed below.

95. I understand that the Supreme Court addressed the obviousness standard in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007) in which the Court elaborated on the framework for analyzing obviousness it had set forth in previous cases. I understand that in *KSR*, the Supreme Court rejected the Federal Circuit's rigid application of the teaching, suggestion, or motivation ("TSM") test for obviousness, that is, some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. Nevertheless, TSM remains as a rationale to support a conclusion of obviousness.

96. I understand that *KSR* recognized other rationales that may be used to justify the conclusion of obviousness, in addition to the TSM test, including at least the following:

> (a) combining prior art elements according to known methods to yield predictable results (*KSR* at 1731);

(b) simple substitution of one known element for another to obtain predictable results (*KSR* at 1731);
(c) use of known techniques to improve similar devices (methods, or products) in the same way (*KSR* at 1731);
(d) "obvious to try" in the narrow circumstances "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions" (*KSR* at 1742);
(e) known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art (*KSR* at 1461); and
(f) recourse to "common sense," provided that where there is an identifiable "reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" (*KSR* at 1741). As will be noted below, the bare assertion of "common sense" to modify a single reference is not enough. The Federal Circuit requires more than the bare assertion. *See, e.g., DSS Technology Management, Inc. v. Apple*, 885 F. 3d 1367, 1374 (Fed. Cir. 2018).

97. I understand that, if a single reference is missing a limitation but that limitation allegedly being supplied by obviousness, particular care must be taken to avoid hindsight bias. Indeed, the Federal Circuit explained in this connection that there are additional showings that must be made other than simply an allegation of "common sense" to supply the missing limitation:

98. I understand that it is improper to combine references from non-analogous arts.

99. I understand that two criteria are relevant in determining whether prior art references are in analogous arts: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference is still reasonably pertinent to the particular problem with which the inventor is involved.

100. I understand that, if the teachings of a prior art reference would lead one skilled in

the art to make a modification that would render another prior art device inoperable, then such a modification would generally not be obvious. I understand that if a proposed modification would render the prior art device unsatisfactory for its intended purpose, then the proposed modification would generally not be obvious. I understand that if a combination would violate the principle of operation of one of the combined references, the combination is not motivated.

101. I understand that it is improper to combine references if the references teach away from their combination. I understand that a reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.

102. I understand that the degree of teaching away will depend on the particular facts. In general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant. I understand that a reference teaches away, for example, if (1) the combination would produce a seemingly inoperative device, or (2) the references leave the impression that the product would not have the property sought by the applicant.

103. I understand that one must consider whether or not there is objective evidence of non-obviousness, which is also referred to as "secondary considerations of non-obviousness." I understand that courts have considered the following secondary considerations in determining obviousness: (1) the invention's commercial success, (2) long felt but unresolved needs, (3) the failure of others, (4) skepticism by experts, (5) praise by others, (6) teaching away by others, (7) recognition of a problem, (8) copying of the invention by competitors, (9) licensing or acquiescence, and (10) other relevant factors.

A. Claim Construction

104. In rendering my opinion, I have applied the constructions of claim terms agreed to by the parties and the constructions determined by the Court. (Dkt. 130, Claim Construction Order, dated 9/5/2023). For each other claim term, I have applied the plain and ordinary meaning of the term as would be understood by a person of ordinary skill in the art ("POSITA") at the time of the claimed invention, where appropriate, in light of the intrinsic evidence.

105. The agreed claim constructions are as follows:

Claim Term	Plaintiff's Proposed Claim Construction	Defendants' Proposed Claim Construction	Court's Construction
"corresponding to" as used in the phrase "cursor image data corresponding to a/said specific image" '102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53.	[**AGREED]**	[**AGREED]**	Plain and ordinary meaning. No construction required.
"cursor image data" '102 Patent, Claim 72; '449 Patent, Claims 1, 27, and 53.	[**AGREED]**	[**AGREED]**	Plain and ordinary meaning.
"**visual image**" '241 Patent, Claim 35.	[**AGREED]**	[**AGREED]**	Plain and ordinary meaning.

Claim Term	Plaintiff's Proposed Claim Construction	Defendants' Proposed Claim Construction	Court's Construction
"server" (computer or system) '102 Patent, Claim 72; '449 Patent, Claims 1, 27, and 53; '241 Patent, Claim 35.	[**AGREED]**	[**AGREED]**	Plain and ordinary meaning. No construction required.
"**said specific image includes/including content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal**" '102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53.	[**AGREED]**	[**AGREED]**	"an image representative of at least a portion of the subject or topic being displayed on the screen" *Lexos Media IP, LLC v. AP- MEX, Inc*., No. 216CV00747JRGRSP, 2017 WL 1021366, at *5–6 (E.D. Tex. Mar. 16, 2017).
"**specified content information**" '102 Patent, Claim 72; '449 Patent, Claims 1, 27, 38 and 53. "**content information**" '241 Patent, Claim 35.	[**AGREED]**	[**AGREED]**	The term "specified content information" / "content information" means "information provided to a user's terminal for use in the display, such as a webpage."

106. The Court's claim constructions are as follows:

Claim Term	The Court's Construction
"cursor display code" ('102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53)	"computer code for modifying the display of the cursor image"
"cursor display instruction" ('102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53; '241 Patent, Claim 35)	"an instruction operable to modify the display of a cursor image"
"cursor image," "initial cursor image," "modified cursor image" ('102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53; '241 Patent, Claim 35)	"a movable image on a display screen whose position can be controlled through a user interface"
"modifying" / "transforming" [said cursor image/initial cursor image] (including "modify [said cursor image]" and "modifying [a cursor image]") ('102 Patent, Claim 72; '449 Patent, Claim 27, 53; '241 Patent, Claim 35)	Plain and ordinary meaning.
"specific image" ('102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53)	Plain and ordinary meaning.
"tracks a movement" ('241 Patent, Claim 35)	Plain and ordinary meaning.
"promotional material" ('241 Patent, Claim 35)	Plain and ordinary meaning.

B. Definition of the "Person of Ordinary Skill in the Art"

107. The Patent Trial and Appeal Board ("PTAB"), in a related inter partes review ("IPR") proceeding, found that a person of ordinary skill in the art would have had "at least a

master's degree in Computer Science, Computer Engineering, or a related field, or hold a bachelor's degree in Computer Science, Computer Engineering, or equivalent and have at least two years of relevant work experience in the fields of UI [(user interface)] design and OSs." Exhibit C at 10. I understand that Plaintiff does not dispute this finding regarding a person of ordinary skill in the art.

C. Level of Ordinary Skill in the Art for the Patents

108. The '102 Patent defines its field of invention as follows:

> *This invention relates to computer networks and software, and more particularly, to a server system capable of modifying a cursor image displayed on a remote client computer.* '102 Patent, 1:5-7.

109. The'449 Patent shares the same specification as the '102 Patent.

110. The claims of the '449 Patent are drawn to systems and methods for modifying cursors by sending instructions from a server to a client computer to enable the appearance of the cursor to depend on the content of a webpage being viewed. This necessarily requires familiarity with web technologies and user interfaces. The claims of the '449 Patent are so similar to those of the '102 Patent that the PTO required Applicants to submit a terminal disclaimer.

111. The field of the '241 Patent, expressed at 1:8-10, is identical to that of the '102 Patent.

112. The '241 Patent shares the same specification as the '102 Patent. The claims are patentably distinct from the claims in the '102 Patent and the '449 Patent but are in the same field.

113. It is my opinion that a POSITA, as of July 25, 1997, in order to read and understand the '102 specification and to make and use the claimed inventions without undue experimentation, would have at least a bachelor's degree in computer science, computer

engineering, human factors engineering, or a related field and would have had at least two years of relevant work experience in the fields of UI design, or equivalent experience.

114. I believe the characterization of a POSITA accepted by the PTAB is a suitable one.

V. REVIEW OF DR. LOREN TERVEEN'S REPORT

A. Overview of the State of the Technology

115. Where relevant, the references asserted by Dr. Terveen are responded to below in their respective sections, except for the following preliminary statements.

116. The Lee Patent is discussed by Dr. Terveen, but is never applied in any invalidity argument in Dr. Terveen's report. Terveen Rpt. at ¶¶ 48-50. Due to this apparent lack of relevance, I decline to offer an opinion concerning the accuracy of Dr. Terveen's characterization of the Lee patent.

117. The Yanker Patent is discussed by Dr. Terveen, but is never applied in any invalidity argument in Dr. Terveen's report. Terveen Rpt. at ¶¶ 53-55. Due to this apparent lack of relevance, I decline to offer an opinion concerning the accuracy of Dr. Terveen's characterization of the Yanker patent.

118. Regarding Dr. Terveen's statements in ¶ 116, I understand that the test for anticipation includes finding, within a prior art reference, the elements "arranged as required by the claim." Lacking this language, I cannot agree with Dr. Terveen's understanding of anticipation under pre-AIA 35 U.S.C. § 102.

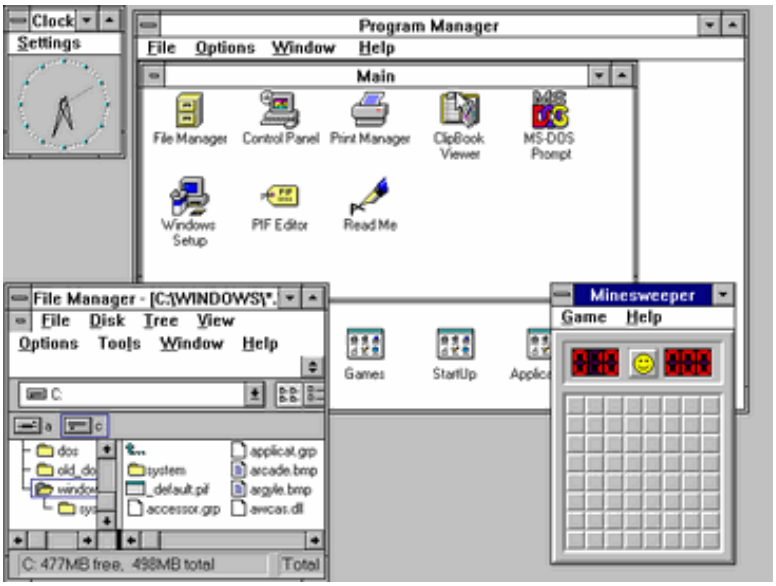
119. Regarding Dr. Terveen's statements in ¶ 117, I do not agree with Dr. Terveen's characterization of the standard for inherency. I understand the legal standard for inherency requires that the element must *necessarily* be present, not merely possibly or probably present.

B. Malamud Does Not Render Any Asserted Claim Obvious

120. I disagree with Dr. Terveen's conclusions in Section V.(A) of his report regarding

obviousness over Malamud, for at least the reasons set forth below.

121. At the outset, Malamud has been evaluated by the Patent Trial and Appeal Board ("PTAB") previously in an inter partes review, and the PTAB found that Asserted Claim 72 of the '102 Patent, and Asserted Claims 1, 38, and 53 of the '449 Patent were not obvious in view of Malamud, even in combination with Anthias, another reference. In particular, the PTAB did not find any evidence that Malamud transmitted the objects over which cursor could later be moved and modified. *See e.g.,* IPR2018-01749, Paper 21 ("Final Written Decision"), pp. 23-26. It follows that if the references claims were not obvious over Malamud + Anthias, they would not be invalid over Malamud alone. Malamud teaches a Microsoft Windows application that works with the Windows 3.1 operating system. Windows 3.1 provided a then-familiar form of user interface having a "desktop" on which icons representing "named entities" can be displayed:



https://upload.wikimedia.org/wikipedia/en/7/73/Windows_3.11_workspace.png

122. As shown in the above screen shot, some of the named entities are "file manager," "control panel," "print manager," *etc.* As shown in the screenshot below, the operating system allowed the user to assign an icon to a named entity by selecting the "Change Icon" button.

http://toastytech.com/guis/win31.html



123. As Malamud explains, the application is to be used with an operating system, such as "an embellished version of the Microsoft WINDOWS, version 3.1, operation system that supports the use of information cursors." Malamud at 4:35-38. This embellished operating system displays various types of information cursors such as the name cursor 26 of FIGS. 2a, 2b, 2c, the preview cursor 34 of FIG. 3, or and the combined name and preview cursor 38 of FIG. 4, or a property cursor 40 of FIG. 5. These supported information cursor types each contain a pointing portion 28 and a second portion which is a box containing information about a named entity such as its name in box 30, an image in preview box 36 or text in a property box 42.

124. While Malamud does not explicitly describe that the embellished operating system is the source of the cursor display code that creates these boxes, a POSITA would understand "supports the use of information cursors" to mean that this code is provided in the embellished

operating system, particularly in light of fact that Malamud nowhere else describes the source of the cursor display code for such boxes, and nowhere states the Malamud application to be the source of any such cursor display code. Rather, as Malamud describes: "Information cursors are made available by an operating system to applications that are run on the operating system." Malamud at 3:6-9.

125. This understanding is further reinforced by Malamud's description that the messages from the application to the operating system are contain only the type of information cursor to be displayed, whether its boxes should always be displayed or only displayed when the cursor is positioned over the associated named entity, and the content to be displayed in the box(es) of the selected information cursor type:

> FIG. 7 is a flowchart showing in more detail the steps that must be performed in order to realize step 56 of FIG. 6. After the window procedure has determined what is at the specified cursor position, the procedure passes a message to the operating system 22 (FIG. 1) that tells the operating system what type of cursor to display and sets forth the contents and type of information to be displayed in the cursor (step 58 in FIG. 7). Suppose that the application program desires to display a name cursor 26 (FIG. 2a). A message requesting that a name cursor be displayed is passed to the operating system 22 along with a text string for the name to be displayed in the name box 30. However, if the cursor to be displayed is a preview cursor 34 (FIG. 3), a message specifying that a preview cursor is required is sent. The message includes a pointer to a bitmap of graphical information that the operating System 22 should use in the preview portion 36. Still further, a property cursor 46 may be requested in the message. The message, in Such a case, includes a text string for the text of property information to be displayed in the property box 42.

Malamud at 4:45-65.

126. Malamud does not explicitly describe how this information is input into the Malamud application for it to pass to the operating system, but a POSITA would understand that the information regarding the type of cursor to display and box content must be specified by a user in some manner, most likely through a direct user input to the Malamud application

to allow the user to determine what type of entity to display and what content to display for the named entities on their computer system. A POSITA would not, however, understand that the Malamud application comes pre-loaded with the information cursor content, because it could not know what files are on the user's computer prior to installation. This understanding is reinforced by Malamud's description of an exemplary named entity: a text file for a book about chess represented by a book icon 32 in which a preview cursor shows a graphic involving chess pieces. *See* Malamud, FIG.4 and 3:35-38 and 3:59-4:3.

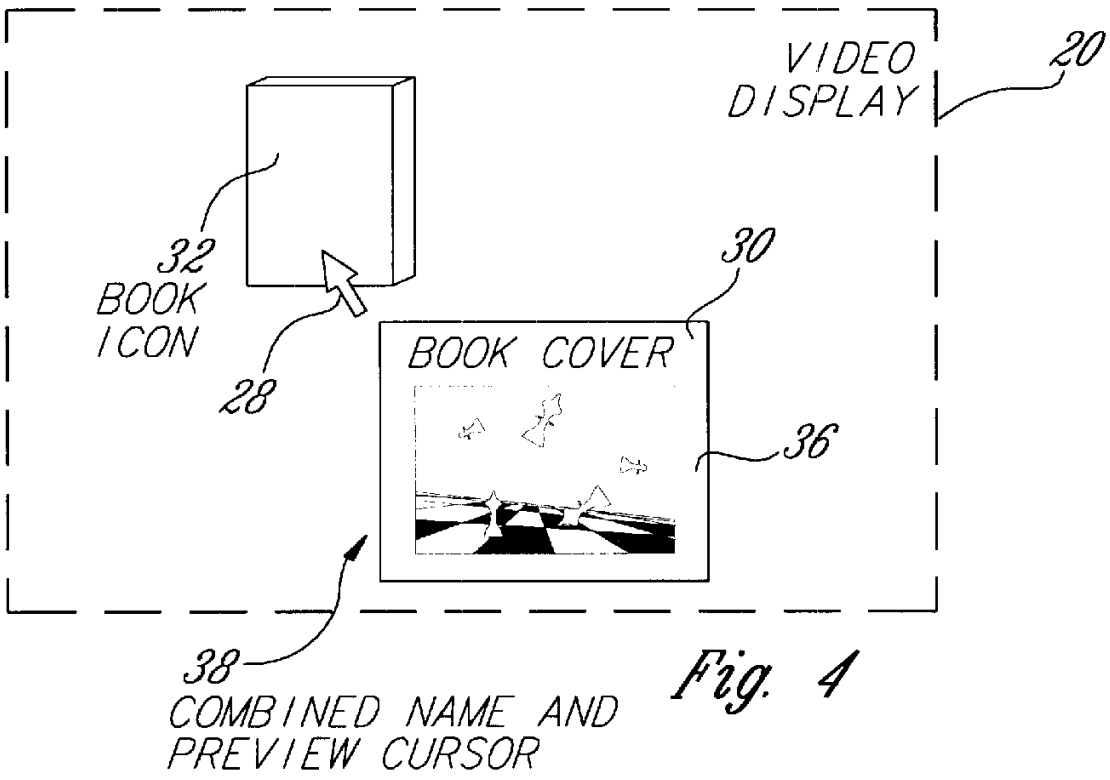


Fig. 4

127. A POSITA would understand from this description that the Malamud application does not come pre-shipped with knowledge that the computer it will be installed upon has stored on it a chess book but rather that the content of the information to be displayed is entered into the application by a user after its installation.

128. Finally, nowhere does Malamud describe the source of the book icon or that the application sends the icon to the operating system. Rather, Malamud reinforces what a POSITA would understand, that the icon for the named entity is provided not by Malamud's application but from the operating system itself, which allows a user to specify icons for a given named entity.

129. As previously discussed, Malamud describes a Windows application that works with an operating system, such as Windows 3.1, that has been "enhanced" to support the use of information cursors.

130. A user installs and configures Malamud's application to, at a minimum, add the content to be displayed in the box(es) of an information cursor (*i.e*, specific image) and to specify which information cursor type is to be displayed when a cursor is positioned over the Windows icon for a given named object/entity (cursor display instructions). There is no disclosure in Malamud of also transmitting the related content to be displayed from a server in response to a request, as required by all Asserted Claims.

131. In my opinion, Malamud does not disclose the source of the icons, but a POSITA would understand that they are provided by the "embellished" operating system, as there is no disclosure of any transmission of icons by the Malamud application.

132. Malamud does not disclose that the application it describes comes pre-configured with any named entities, nor would such make sense because, like the book on chess of Malamud's example, named entities are screen objects obtained from files that a user has created or saved on their computer. In a Windows system, those files can be represented by icons that are displayed by Windows on a user's screen. Malamud's application can then be used to enter content to be displayed in the information cursor so that this additional

information about the named entity can be displayed in the box(es) of the information cursor. There is no disclosure in Malamud that the application is used to create named entities or their icons or sends any content to be displayed corresponding to the specific image.

i. Limitation 72[a]: receiving a request at said at least one server to provide specified content information to said user terminal;

133. Dr. Terveen does not contend that Malamud teaches this limitation, and instead relies on the knowledge of a POSITA, stating that "Computer networking techniques were well known to persons of skill in the art at that time, and it would have been obvious to a person of skill in the art that Malamud's system could be used in a networked environment." Terveen Rpt. at ¶ 133. I disagree with this, and with Dr. Terveen's subsequent examples.

134. As an initial matter, Malamud describes a Windows application that works with an operating system, such as Windows 3.1, that has been "enhanced" to support the use of information cursors. A user installs and configures Malamud's application to, at a minimum, add the content to be displayed in the box(es) of an information cursor (*i.e*, a specific image) and to specify which information cursor type is to be displayed when a cursor is positioned over the Windows icon for a given named object/entity (cursor display instructions). There is no disclosure in Malamud of also transmitting the related content to be displayed from a server in response to a request, as required by claim 72. Dr. Terveen does not suggest otherwise.

135. Furthermore, Malamud makes it clear that "[i]nformation cursors are made available by an operating system to applications that are run on the operating system." Malamud at 3:6-8. Malamud further describes the invocation of information cursors by sending a message to the operation system telling it what cursor needs to be displayed. Malamud at 5:14-65. The icons in Malamud are provided by an "embellished" operating system. There is no disclosure that they are provided by Malamud's application.

ii. Limitation 72[b]: providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image, and

136. Within Malamud, the user annotates the content that is to be displayed. The Malamud application does not know prior to installation what files are stored, or what annotated content to display. Thus, simply including the concept of a server, whether understood readily by a POSITA at the relevant time or not, does not address the this claim element because there would still be no analogue in an online version of Malamud to make a request for an HMTL file or specified content information that would meet all the requirements for that term, as discussed further below. Moreover, there would be no motivation for a POSITA to modify Malamud from a Windows application to an on-line application that provides the user annotated content within the cursor boxes because then the user of the user terminal would have to provide the proposed on-line version of Malamud access to the files on its computers in order for it to operate.

iii. Limitation 72[d]: wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal,

137. Moreover, there would be no need for such an on-line version to send the Windows icons down to the user terminal, since those icons would already exist at the user terminal for the files stored there. Therefore, there is no motivation to modify Malamud to provide the icons which is the only asserted information to be displayed that would meet the element 72[e] requirement "to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal."

138. For the same reasons, Malamud does not render obvious Claims 1, 27 and 53 of the '449 Patent because these claims involve substantially the same requirements as Claim 72 of the '102 Patent and the same reasoning I have already discussed applies to these claims as well.

139. Claim 35 of the '241 Patent is also not rendered obvious by Malamud, but different reasoning applies because this claim involves very different substantive requirements, including a dynamic requirement not present in the Asserted Claims of the '102 and '449 Patents via the "tracks a movement" requirement, as I will further discuss.

iv. Limitation 35[a]: at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image

140. The same reasoning applies here as for the other Asserted Claims as to why Malamud does not suggest to a POSITA a modification to a server system for the same reasons I have discussed. In particular, I disagree with Dr. Terveen's obviousness conclusions because Malamud discloses that it works with an enhanced version of Windows that supports information cursors and which already creates icons for named entities. Therefore I do not agree these icons "would be supplied to the client computer from the server" as stated in ¶ 186 of Dr. Terveen's report.

141. Moreover, while I do agree that "the message sent by the application requesting an information cursor [to be displayed] must specify what type of information cursor is to be used and what text and/or image should appear in it" (Terveen Report, ¶ 188), I do not agree that an on-line version of Malamud would contain this information. Nor do I agree that a POSITA would be motivated to make an on-line version that could send such a message because it would require access to file directories and icon information at the client computer that a user would not necessarily want to provide in order to operate in the manner that Dr. Terveen posits. Therefore, Malamud does not render element 35[a] obvious.

v. Limitation 35[b]: following the receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image

142. I will discuss element 35[b] in connection with element 35[c].

vi. Limitation 35[c]: wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image

143. Here I disagree with the inherency argument Dr. Terveen makes in ¶ 193 of his report that "because the visual image appears as part of the cursor, it necessarily tracks the movement of the modified cursor image." For one thing, Dr. Terveen's interpretation would render the words "tracks a movement of the modified cursor image" mere surplusage, effectively reading them out of the claim entirely.

144. At the outset, I note that during the prosecution of the application leading to the '241 Patent, on February 8, 2011, by Examiner's Amendment attached to the Notice of Allowability, the Examiner added the "tracks a movement" limitation in allowing the claim to issue over prior art. See Exhibit D.

145. U.S. Patent Nos. 6,018,345 ("Berstis") and 5,956,484 ("Rosenberg") were specifically cited and distinguished by the Examiner as not meeting the "tracks a movement" limitation. Yet in Berstis, there was a cursor image modification when the user scrolled over a link. Therefore, any image that was part of the modified cursor image would inherently move along with it. This is why an image that is simply part of the modified cursor image cannot be considered to "track" it as Dr. Terveen posits.

146. Said another way, an image that is "part of the cursor" does not "track" itself. In order to "track" the movement of the "modified cursor image" as required by this claim element, the visual image cannot be part the modified cursor image--unless that visual image changes in accordance with the movement of the modified cursor. This is shown, for example,

in the embodiment disclosed in the '102 specification, in which a straw that is integrated with the modified cursor actually rotates in accordance with the modified cursor's movement. An image that is not part of the modified cursor can also track its movement by changing or moving in accordance with the movement of the modified cursor image, such as by being programmatically tied to movement of the modified cursor image. For example, the '102 specification describes satellite images that become programmatically included with the modified cursor image because they move or change in accordance with modified cursor image, such as the animated birds embodiment.

147. A POSITA would clearly understand that an image that is merely part of the modified cursor image does not meet this limitation.

148. As Dr. Terveen expresses no opinion regarding altering Malamud to modify a cursor image to include a visual image that tracks its movement, I will reserve my right to express such an opinion if any such opinion is presented.

C. None of the Adveractive Games Anticipates any Asserted Claim.

149. As an initial matter, it is not my understanding that a collection of different "Adveractive Games" can be asserted as anticipating, because anticipation requires a single reference. Therefore, I disagree with Dr. Terveen's offer of a combination of five (5) games/baubles as anticipating, particularly when he maps various claim elements onto features from different games in the combination. Moreover, Dr. Terveen, offers no motivation to combine any of these games with another of the games.

150. Dr. Terveen's statement that "[t]he Cosmic Bowling game was available on Brunswick's website shortly around the end of March or in early April of 1997" lacks corroboration. Terveen Rpt. at ¶ 195. Unless Dr. Terveen or Defendants produces evidence

corroborating such a date, I disagree that the Cosmic Bowling game constitutes prior art, as it cannot be shown to predate the priority date of the Common Specification of the Asserted Patents, particularly in light of the fact that the Internet Archive capture of the Brunswick website only indicates the presence of the game in 1998. Terveen Rpt. at ¶ 240.

151. I also note that the Adveractive Games were not supported by a browser. The user would first have to install a Shockwave plug-in in order to play an Adveractive Game. The need for such installation would not lend itself to the advertising or promotional purposes to which the systems and methods of the Asserted Patents are directed.

152. I note that the Brunswick Cosmic Bowling Game has no corresponding video, and Dr. Terveen only presented screen shots of the operation of that game. However, based upon the code, I do not disagree with the factual presentation of the game Dr. Terveen presents in his report. Terveen Rpt. at ¶ 203. To function, the game involved some conventional drag and drop operations, such as depressing and holding a mouse button to move the bowling ball and then releasing the mouse button to launch the bowling ball. Adveractive's witness Steve Bullock testified as much in his deposition. *See e.g.,* Exhibit E, Deposition of Steve Bullock ("Bullock Depo."), 232:6-14. Terveen Rpt. at ¶ 212. Other Adveractive Games also involved conventional drag and drop operations to move objects. For example, in the Hummingbird game, the user could drag and drop a plant from one location to another, and in the Halloween game the user could depress and hold down a mouse key to grab a pie and then release the mouse key to "throw" the pie.

153. Some of these games involved a cursor modification, and some did not. None of these games disclosed each and every claim element of any Asserted Claim. In none of these games did a modified cursor image include a visual image that tracked its movement.

154. If the Brunswick Cosmic Bowling game is deemed to be prior art, I dispute Dr. Terveen's opinions, in particular at ¶¶ 212-214 of his report, because nowhere in my infringement report is the opinion that the object of a drag-and-drop operation meets any limitation of any Asserted Claim. These objects are not included visual images in the context of the '241 Patent for a number of reasons, which I will discuss further in conjunction with various claim limitations below. It is emphatically not my opinion that "the bowling balls would also have to be considered part of the cursor for the period where they are selected for movement." Terveen Rpt. at ¶ 214. It is also not my opinion that "objects that are fixed on the display become part of the cursor." *Id*. Nor is it my opinion that the explanatory box becomes "part of the cursor," and it certainly does not change in response to cursor movement. One could move the cursor around over the object and the box would still contain the same information. In other words, the same information is displayed whenever the cursor is over the object and the code only determines (yes or no) whether the cursor is positioned over the object. I agree with Dr. Terveen's analysis in ¶ 216 of his report that the code only determines whether the "computer mouse is located over" the associated object in order to display it. There is no change or movement of the text as a result of the movement of the cursor so the text does not track movement of the modified cursor. Indeed, I see no analysis from Dr. Terveen that there is any modified cursor associated with the display of text in an information box.

155. I disagree with much of Dr. Terveen's analysis of the Fearless Fergie bauble in ¶ 218. In particular, the cat head image becomes the modified cursor image itself – it is not a visual image that "tracks a movement of the modified cursor image." The claim language requires an image that was not part of the modified cursor image to become an "included" image that tracks a movement of the modified cursor image. I do not see in Dr. Terveen's

analysis of Fearless Fergie any such visual image. I do agree with Dr. Terveen that any changes in the cat head image track other dynamic conditions of the game (e.g., the location of the rodent[2]), but not the movement of the modified cursor image. *See*, *e.g,* Terveen Rpt. at ¶ 217. ("This happens whether the cat's head is being moved horizontally by the user or not.")

156. The Halloween Haunt game is also a drag and drop game. The user can depress a mouse button when they have moved the cursor over a pie in order to "hold" it and can release the mouse button to "throw" it. When the user clicks down on the mouse button, the cursor changes to a hand that covers a portion of the bottom surface of the pie. I therefore disagree on several levels with Dr. Terveen's analysis in ¶ 221 of his report that "the system cursor disappears and is replaced by the cursor image of a hand holding a pie, which tracks the movement of the computer mouse." First, the system cursor is not replaced by a cursor image of a hand holding a pie. The cursor image is replaced by a hand. Second, the hand image does not include any part of the pie image. On the contrary, the hand blocks the portion of the pie image beneath it. If Dr. Terveen's analysis were correct, then any conventional drag and drop operation "includes" whatever object is being dragged and dropped as part of the cursor image. But, under such an analysis, the cursor image is "tracking" itself, which a POSITA would understand from both the specification and prosecution history is not what the claim covers. It covers images that are not part of the modified cursor image but which are included in/with the modified cursor image and track its movement.

157. The Hummingbirds and Prowler baubles do not involve any cursor modification. The Hummingbirds bauble does allow the user to click on a flower and move it. There is

[2] I use "rodent" to refer to the mouse animal that appears in the Fearless Fergie game to avoid confusion with a computer "mouse."

cursor modification upon the click and no analysis is needed here as to whether there is any modified cursor image that includes a visual image that tracks its movement. Likewise, there is no cursor modification in the Prowler game either.

158. Before moving onto the specific limitations of the Asserted Claims, I note that I agree with Dr. Terveen that when the Court is referring to a cursor image that is "controlled through a user interface," this phrase refers to "gestures to control mouse movement."

'102 Patent, Claim 72

i. Limitation 72[Preamble] A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:

159. I do not agree that the Hummingbirds and Prowler games disclose a method of modifying an initial cursor image. Terveen Rpt. ¶ 252 ("In the Hummingbirds and Prowler baubles, the cursor image does not itself change.") I also reiterate that I do not see evidence that Brunswick published the Cosmic Bowling game on its website prior to 1998.

ii. Limitation 72[b]: providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image,

160. I do not agree with Dr. Terveen's implicit analysis in ¶ 255 that the "various right and left-handed cursor [images]" are "specific images," as required by the claim. I also note that the chart depicted therein includes images that are not cursor images, much less specific images that meet the claim limitation.

161. I agree with Dr. Terveen that the initial cursor image in the Fearless Fergie game changes to a cat head image. I do not agree that the cast members in the chart recited at ¶ 256 are cursor images. (For example, most of them are rodents or portions of rodent holes.) I do not agree that the cat head is an included visual image that tracks the movement of the modified

cursor, because it *is* the modified cursor itself. I also do not agree that claim 72 includes the requirement of a modified cursor image including a visual image that tracks its own movement.

162. Likewise, I do not agree that the cast members of the Halloween Haunt game Dr. Terveen depicts in ¶ 257 are "indications of cursor image data corresponding to a specific image." These are graphic elements of the game. The only ones that involve a modified cursor image are the two hands 20 and 21.

163. Likewise, the Prowler images Dr. Terveen depicts in ¶ 257 are also graphic game elements that are not the "specific image" required by the claim because there is no cursor modification in which the Prowler comprises the shape and appearance of a modified cursor image.

164. I similarly disagree with Dr. Terveen's conclusions in his ¶ 260 that the plants in the Hummingbird game are specific images as required by the claims because there is no cursor modification in which the plant has the shape and appearance of a modified cursor. It is only a drag-and-drop operation in which the plant is able to be moved on depressing and holding a mouse key. If the cursor image had actually been modified to take the shape and appearance of the plant, there would have been no need to keep the mouse key depressed to drag the plant.

165. In the Hummingbird game, there are birds that move. Sometimes, when those birds are near a plant, their movement is affected in somewhat unpredictable ways. However, none of this illustrates to me that the birds are the claimed "specific image," as they likewise do not have the shape and appearance of a modified cursor image, whether or not a plant is being dragged. Dr. Terveen identifies no specific images as required by the claim.

iii. Limitation 72[c]: transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction,

166. In ¶ 264, Dr. Terveen lists as modified cursors "pointing hand" cursors, "open hand

cursors," and "hand with fingers." All of these are functional cursors that do not meet the limitations of a specific image because they do not meet limitation 72[d] as I will discuss below. Moreover, the "hand with fingers" also does not meet the limitation 72[e] as I will also discuss below.

167. I disagree with Dr. Terveen's analysis in his ¶ 270 that depressing a mouse key to select a bowling ball modifies the cursor to make the ball become part of the cursor. This is simply a conventional drag-and-drop operation and the shape and appearance of the hand is not modified in any way by the ball. For example, if I depress my mouse key on a PDF file that I have open in Adobe Acrobat and drag it to the right half of my screen, I do not consider the shape and appearance of my cursor image to have changed to comprise the image of the entire open PDF file. Therefore I disagree with his conclusion that the selected bowling ball modifies the shape and appearance of any cursor image.

168. Regarding the Fearless Fergie game, I do not disagree that there is a "[c]ursor change to cat head when the mouse rolls into bauble" or that the "[c]at's eyes and mouth change depending upon the relative position of cat head to Fergie Mouse" as Dr. Terveen asserts in ¶ 265. However, these cursor modifications do not meet other limitations of the claim as I will further discuss particularly with respect to limitation 72[e].

169. While I do not disagree that, in the Halloween Haunt game the "cursor [image] changes to hand…when mouse button down performed on the pie," I do not agree that the pie hand has the shape and appearance of the pie or with any implication that the pie itself, which is being dragged, is a claimed "specific image" of the modified cursor. It is simply a dragged object. Also, the hand blocks the portion of the pie that it covers.

170. I appreciate that there is an information box in the lower right hand corner of the

game and, depending upon which game object the user has positioned the cursor over, the text displayed in that box can change to text that relates to the object over which the cursor is positioned. I do not agree that this text is any claimed "specific image" that modifies the shape and appearance of a modified cursor image or that there is even any cursor modification necessarily taking place when the text is changed because hovering the cursor over that object may not trigger any cursor modification, which would be the result of a separate instruction. Said differently, the information that is contained in the box is not based upon any cursor display instruction at all.

171. Regarding the Hummingbird bauble, while I do not necessarily disagree with Dr. Terveen's statement that the "plant follows motion of computer mouse when it is selected," Terveen Rpt. ¶ 272, I do disagree with the implication that any infringement opinion I have rendered requires the object of a conventional drag-and-drop operation to be considered a specific image. For example, if I am depressing my mouse key on a PDF file that I have open in Adobe Acrobat and dragging it to the right half of my screen, I do not consider the shape and appearance of my cursor image to have changed to comprise the image of the open PDF file. Furthermore, in the Hummingbird bauble there is no cursor modification at all. Also, the bird's programming is based upon the position of the plant and not based upon any cursor display instructions. Nor is a drag-and-drop operation a result of a cursor display instruction, which involves a cursor image modification. Put simply, the object being dragged in a conventional drag and drop does not become a claimed "specific image" of the cursor.

172. Similarly, regarding the Prowler bauble, I understand that the Prowler image is a graphical object of the bauble with its own program directing its movement. I also understand that this program takes into account the position of the cursor. The Prowler image is not an

image that has the shape and appearance of a modified cursor image. Nor does the Prowler's appearance or orientation change as a result of a cursor display instruction. Further, in the Hummingbird bauble there is no cursor modification at all. Also, the bird's programming is based upon the position of the plant and not based upon any cursor display instructions, which involves a cursor image modification.

iv. Limitation 72[d]: wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal, and

173. I do not disagree that the Adveractive games/baubles display text and images as visual components thereof and that this is "information to be displayed."

174. I disagree, however, that any of these games/baubles contain elements meeting the "specific image" limitation. For example, the pointing hand, open hand and three fingered hand indicate that an object may be or has been selected. I agree with Dr. Terveen that the pointing hand or open hand "do not, by themselves, meet the stipulated requirement of being 'representative of at least a portion of the subject or topic being displayed on the screen'." Terveen Rpt at ¶ 279.

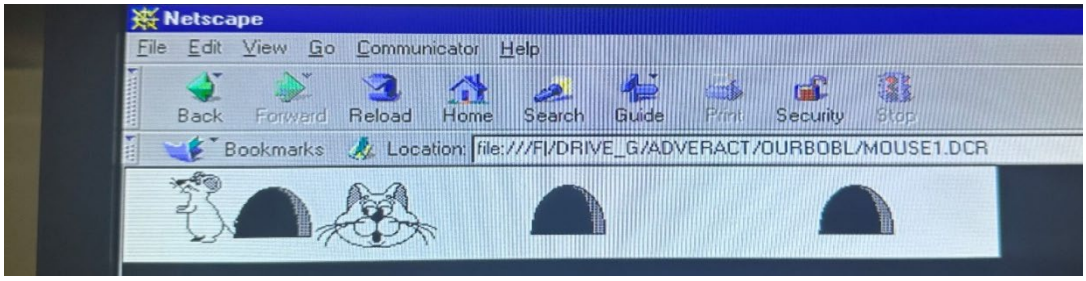
175. I do not agree with Dr. Terveen's statement that it is my opinion that "the cursor image should not be limited to the cursor image but also things that are in the screen that the cursor may overlay." *Id.* at ¶ 280. Quite the contrary, when a cursor image overlays another image and blocks the underlying image, that underlying image cannot affect the shape and appearance of the cursor image. In every instance of the Brunswick Cosmic Bowling game, the identified modified cursor image blocks the underlying image.

176. I will not address Dr. Terveen's hypothetical in ¶ 281 of his report as my opinions here are limited to the actual prior art asserted and I have already addressed his opinion in

¶¶ 282 and 283. I do emphasize however, that the term "specific image" in the context of the Asserted Claims of the '102 and '449 Patents does not cover the Adveractive elements pointed to by Dr. Terveen.

177. Turning to Fearless Fergie, as an initial matter I disagree that the design elements of the bauble are the drawings of the mouse holes and various images of Fearless Fergie that comprise the information to be displayed versus the modified cursor image. I also do not disagree that the modified cursor images are various cat heads. However, I do not agree with Dr. Terveen's premise that "[the cat] images are all representative of a cat chasing a mouse." Terveen Rpt. at ¶ 284.

178. In particular, as shown below, and as Dr. Terveen acknowledges, the information to be displayed is the three mouse holes and Fearless Fergie herself. The subject or topic of the "information to be displayed" is a rodent named Fearless Fergie and her living quarters, i.e.,



rodent holes.

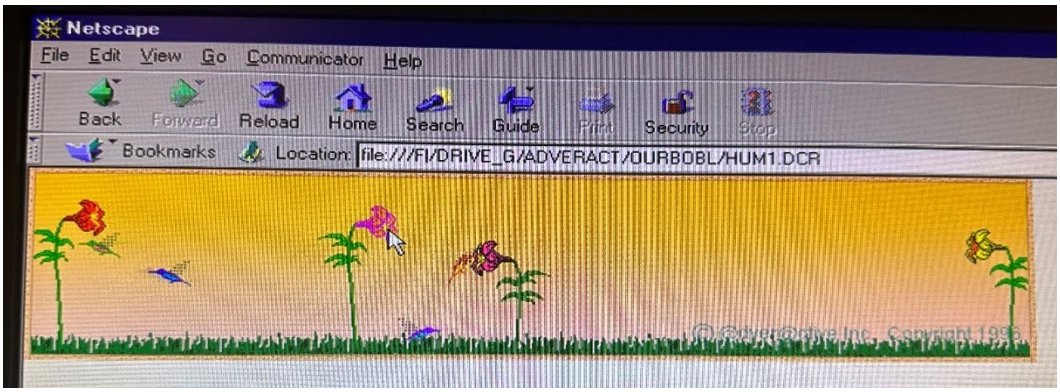
179. The cat head appears when the cursor is moved anywhere over the bauble's display field and the cat head is itself the modified cursor image. The only appearance of a cat is the modified cat head cursor itself. The claim requires that the shape and appearance of the modified cursor (the cat head) be representative of the information to be displayed. Of course, the cat head is representative of itself, but that is not what the claim requires. In the same way that the modified cursor cannot track itself in the '241 Patent, the modified cat head cannot represent itself in the '102 or '449 Patent context. Since there is no other indication of a cat in

any of the "information to be displayed," one cannot say that the cat head is representative of a "cat chasing a mouse." Terveen Rpt. at ¶ 284. A cat head is not representative of a rodent (mouse) or a mouse hole, nor does Dr. Terveen suggest that it is. Therefore, I do not agree that this claim limitation is met.

180. Regarding the Halloween Haunt, I disagree with Dr. Terveen's premise that the specific image comprises the pie and the hand. The specific image of the modified cursor image is just the hand. The pie is the separate object of a drag-and-drop operation. The hand itself is not a specific image because it is not "representative of a shooting game in which the weapons are pies," nor does Dr. Terveen suggest that it is. *See* Terveen Rpt. at ¶ 285.

181. Regarding Prowler, there is no cursor modification and nothing in the Court's claim construction or in my opinions suggests that the "prowler is part of the cursor image" as Dr. Terveen asserts in his ¶ 286. I note here however, that Dr. Terveen and I disagree regarding his idea that claim 72 can be met because the cursor image is always representative of itself. Dr. Terveen's idea is highlighted by his statement in ¶ 286 that "[t]he images of the prowler are representative of the bauble, a prowler staring through a window." Of course the bauble's image objects represent themselves. The claim requires a correspondence between a specific image of the modified cursor image and the subject or topic of the information to be displayed. Because this bauble does not modify any cursor into a specific image at all, Prowler also does not meet this claim requirement.

182. In the Hummingbirds game, the information to be displayed includes grass, the colored sky behind the flowers, and the border of the game, as well as the plants and the Hummingbirds.



183. There is no cursor modification in the game, and therefore there is no specific image to address. Nothing I have testified to or have seen in the Court's construction would lend itself to the notion that "the plants and butterflies [sic; hummingbirds] in the bauble may also be identified as components of the cursor when they move with the computer mouse." Terveen Rpt. at ¶ 287. As I have previously said, the plants are merely objects of a conventional drag-and-drop operation and therefore are not part of a modified cursor image. Moreover, the fact that the hummingbirds are programmed to have their own movement, which can sometimes be affected by the position of the plant, likewise does not make the birds a specific image that defines the shape and appearance of any modified cursor image. I also dispute the notion that the fact that the "images of birds and plants are representative of the subject of…a pastoral scene with plants and hummingbirds" is anything but tautological in this context: of course objects represent themselves. Therefore, this bauble also does not meet this claim element.

v. Limitation 72[e]: wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal.

184. As an initial matter, this limitation requires a cursor modification into the shape and appearance of the specific image in response to the movement of the cursor image over a

display. In the Brunswick Bowling game there is a cursor image modification from an initial cursor to the "open hand" cursor image based upon the movement of the cursor image over a bowling ball. As Dr. Terveen acknowledges, the "open hand" cursor is not a specific image. While Dr. Terveen does assert that the truncated (3-fingered) hand is a specific image, that cursor image modification does not take place responsive to cursor movement but rather as a result of a mouse down user input taking place as part of a drag-and-drop operation. One can move the conventional hand all day long around on the Brunswick screen, and it will not change to a truncated hand. Such a change will only occur if the mouse button is depressed. Therefore, the change is not "responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal." I do not dispute that this particular drag-and-drop operation and accompanying cursor image modification only takes place when the cursor is positioned over the bowling ball. As such, the position over the bowling ball is involved only insofar as one cannot drag and drop an image on a screen until the cursor is positioned over the item to be dragged. But that is not what this claim limitation requires. Cursor movement over the bowling ball does not cause the alleged cursor modification; user input does. Therefore, the Brunswick Cosmic Bowling game does not meet this claim limitation (even if Cosmic Bowling is deemed to be prior art).

185. The Fearless Fergie game does involve a cursor modification based upon movement, but it is not based upon movement over information to be displayed to which the modified cursor corresponds. Rather, the cursor image is always initially modified into the cat head merely based upon entry into the game window. Therefore, that game also does not meet limitation 72[e].

186. The Halloween Haunt game does not modify the cursor image to the hand image (and there is no modification to the hand holding the pie for the reasons I discussed earlier) based upon the movement of the initial cursor image over a portion of the information to be displayed to which it corresponds. Rather, the cursor modification is based upon a user mouse down input over a certain object in the game. Therefore, Halloween Haunt also does not meet this claim limitation.

'449 Patent, Claim 1

i. Preamble: A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:

187. The same statements and reasoning that I have provided regarding the Adveractive games in this report regarding the lack of modifying a cursor image into the shape and appearance of a specific image regarding claim 72 apply equally to Dr. Terveen's statements for the '449 Patent's claim 1 and the other Asserted Claims of the '449 Patent as well. Therefore, this preamble, whether or not limiting, is not met by any of the Adveractive games for the same reasons.

ii. Element 1[a]: cursor image data corresponding to said specific image

188. The same statements and reasoning that I have provided regarding the Adveractive games in this report regarding the lack of specific images in claim 72 apply equally to Dr. Terveen's statements for this claim and the other Asserted Claims of the '449 Patent as well.

189. However, I add that this claim limitation is only met by cursor image data that creates the shape and appearance of the specific image of a modified cursor image.

190. For the Brunswick Cosmic Bowling game, I agree that each of the "hand" cursor images are cursor images but disagree with Dr. Terveen's description in ¶ 304 of the three fingered hand image having "fingers in ball" because the cursor image is only:



191. The Rhino ball, Helix ball, Zone[3] ball, lane arrows, button to switch handedness, new game button, and instructions button are not specific images of the modified cursor image. Nor does the help box constitute a specific image that meets the requirements of this claim because it does not define the shape and appearance of the modified cursor image.

192. I do not dispute that the cat head images recited in ¶ 303 for the Fearless Fergie bauble are cursor images but not a specific image of modified cursor images as required by the claim, as previously discussed in connection with claim 72.

193. Likewise, the "hand" images in the Halloween Haunt game are cursor images, but the pie images are objects of a conventional drag-and-drop operation and not specific images of modified cursor images for the reasons I have previously explained in connection with claim 72.

194. The Hummingbird and Prowler baubles do not have cursor modifications and the Prowler images or bird images are not specific images of modified cursor images for the reasons I have previously explained in connection with claim 72.

iii. Limitation 1[b]: cursor display code, said cursor display code operable to modify said cursor image, and

195. I do not disagree with the cursor modifications described in the "modification in cursor image" column in ¶ 309 of Dr. Terveen's report, except that the cursor image in row (v) does not have "fingers in ball." The modified cursor image is simply:



196. I also do not disagree with the description in the "cursor change" column regarding

[3] Dr. Terveen refers to a "CZone" ball, but I do not see the letter C in the name of the ball.

the Fearless Fergie bauble in Dr. Terveen's ¶ 310. However, these alleged modified cursors do not have the shape and appearance of the specific image required by the claim for the same reasons as previously described in connection with claim 72.

197. I do not agree, as previously explained, with the description in the "cursor change" column regarding Halloween Haunt in Dr. Terveen's ¶ 311. The cursor changes to a hand. The pie is the object of the drag-and-drop operation and not a specific image of the modified cursor for the reasons I have previously described in connection with claim 72.

198. I also disagree with the statements in ¶ 312 that any claim construction or my infringement opinions would require any selected/dragged object to become a specific image of a modified cursor image. For the previously described reasons, the pie in the Halloween Haunt game, the Rhino, Helix and Zone balls or any bowling ball that is the object of a drag-and-drop operation in the Brunswick Cosmic Bowling game, the plant or a hummingbird in the Hummingbirds bauble, and the Prowler in the Prowler bauble are not specific images for the reasons previously described in connection with claim 72.

199. Therefore, this claim limitation is not met by any of the Adveractive games when read in conjunction with the other claim elements.

iv. Limitation 1[e]: wherein said specified content information further comprises information to be displayed on said display of said user's terminal, said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and

200. The same statements and analysis I made for claim 72 regarding the specific image including content corresponding to at least a portion of said information to be displayed also apply here.

v. Limitation 1[f]: wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor over a display of said at least a portion of said information to be displayed on said display of said user's terminal, and wherein said specific image relates to at least a portion of said information to be displayed on said display of said user's terminal.

201. The same statements and analysis I made for claim 72's requirement for modifying the cursor image to the specific image in response to movement of the cursor over a display of the at least the portion of the information to be displayed on the display of the user's terminal also apply here.

202. I do not agree with Dr. Terveen's opinion that game elements such as bowling balls, lane arrows, and game buttons are specific images defining the shape and appearance of any modified cursor images, as I have previously explained. I have also previously explained why none of the hand images are specific images and furthermore why this claim's requirement of cursor modification taking place responsive to cursor image movement is not met because the cursor modification takes place responsive to user input and not a cursor movement. Consequently, the Brunswick Cosmic bowing game does not meet this claim limitation either.

203. I have previously explained why the cat head in the Fearless Fergie bauble is not a specific image and why its cursor modification is not responsive to movement over the portion of the corresponding information to be displayed limitation of claim 72. For the same reasons, the Fearless Fergie bauble does not meet limitation 1[f] either.

204. I have previously explained in connection with the requirements of claim 72 why the hand in the Halloween Haunt game is not a specific image, why the pie is not a specific image of a modified cursor image, and why the cursor modification is not responsive to movement over the portion of the corresponding information to be displayed but rather a user input. For the same reasons, Halloween Haunt game does not meet this limitation 1[f], either.

205. I have previously explained in connection with the requirements of claim 72 why the Prowler bauble exhibits no cursor modification and why the Prowler is not a specific image of a modified cursor image. For the same reasons, the Prowler bauble does not meet limitation 1[f], either.

206. I have previously explained in connection with the requirements of claim 72 why the Hummingbird bauble discloses no cursor modification and why the birds and the plant are not specific images of a modified cursor image. For the same reasons, the Hummingbird bauble does not meet limitation 1[f], either.

'449 Patent, Claim 27

i. Preamble: A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:

207. This preamble is identical to the preamble of claim 1 of the '449 patent and is not disclosed by the Adveractive games and baubles for the same reasons previously discussed above.

ii. Limitation 27[a]: cursor image data corresponding to said specific image

339. This limitation is identical to claim element 1[a] and is not disclosed by the Adveractive games and baubles for the same reasons I have previously discussed above.

iii. Limitation 27[b]: cursor display code, said cursor display code operable to modify said cursor image, and

208. This limitation is identical to limitation 1[b] and is not disclosed by various Adveractive games and baubles for the same reasons I have previously discussed above.

iv. Limitation 27[c]: a first server computer for transmitting specified content information to said remote user terminal, said specified content information including at least one cursor display instruction indicating a location of said cursor image data,

209. This limitation is identical to claim element 1[c] and is not disclosed by the

Adveractive games and baubles for the same reasons I have previously discussed above.

v. Limitation 27[d]: said cursor display instruction and said cursor display code operable to cause said user terminal to display a modified cursor image on said user's display in the shape and appearance of said specific image, wherein said specified con-tent information is transmitted to said remote user terminal by said first server computer responsive to a request from said user terminal for said specified content information, and

210. This claim element is identical to claim element 1[d] and is not disclosed by the Hummingbirds and Prowler games for the same reasons I have previously discussed.

vi. Limitation 27[e]: wherein said specified content information further comprises information to be displayed on said display of said user's terminal, said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and

211. This limitation is substantively identical to claim element 72[d] and is not met by any of the Adveractive games for the reasons I have previously discussed in connection with that claim.

vii. Limitation 27[f]: wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor image over a specified location on said user's terminal, and wherein said specific image relates to at least a portion of said information to be displayed on said display of said remote user's terminal.

212. This limitation is not met by the Adveractive games for the reasons I have previously discussed in connection with the previously addressed claims. The first part of this limitation ("wherein said cursor display code … on said user's terminal") is similar to the part of limitation 72[e] that begins with "a cursor display code operable" in that claim element, but differs in that it requires "movement of said cursor over a specified location on said user's terminal," whereas limitation 72[e] refers to "movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal." Therefore, this element does not require the information to be displayed that triggers the modification to be the same as the

content to which the specific image corresponds. So, my opinions regarding the Adveractive games in which the cursor modification is not triggered by movement but rather a user input, or where there is no cursor modification at all, stays the same.

'449 Patent, Claim 53

i. Preamble: A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:

213. This preamble is identical to the preamble of claim 72 and is not disclosed by the Hummingbirds and Prowler baubles because there is no cursor modification for the same reasons I have previously discussed.

ii. Limitation 53[b]: providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image

214. This claim element is identical to limitation 72[b] and is not disclosed by the Adveractive games and baubles for the same reasons I have previously discussed.

iii. Limitation 53[c]: transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction

215. This limitation is identical to limitation 72[c] and is not disclosed by the Adveractive games and baubles because there is either no cursor modification or there is a cursor modification but no specific image as required by the limitation for the same reasons I have previously discussed,

iv. Limitation 53[d]: wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal, and

216. This limitation is identical to limitation 72[d] and is not disclosed by any of the Adveractive games and baubles for the same reasons I have previously discussed.

v. Limitation 53[e]: wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal, and wherein said specific image has a shape and appearance relating to said information to be displayed.

217. The first part of this limitation ("wherein said cursor … said user's terminal") is identical to the limitation 72[e] and is disclosed by the Adveractive games and baubles for the same reasons I have previously discussed.

'241 Patent, Claim 35

i. Preamble: A system for modifying a cursor image, comprising:

218. I have previously discussed how the Hummingbirds and Prowler baubles do not modify cursor images. Consequently, those baubles cannot meet this claim limitation for the same reasons.

ii. Limitation 35[a]: at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image

219. As an initial matter, I disagree with Dr. Terveen's premise in ¶ 360 that the visual image is the cursor image ("…specify the appearance of a visual image, i.e., the cursor."). As I will discuss further in connection with limitations 35[b] and [c], a visual image that is a fixed part of the modified cursor image cannot "track" the modified cursor image because it simply moves with it. A POSITA would not understand the claim to cover a fixed part of the cursor image because such an image would have been met by the prior art Berstis reference, which the Examiner distinguished in amending the claim to add the "tracks a movement" limitation. As I will discuss further in connection with limitations 35[b] and [c], none of the Adveractive

games or baubles have a visual image that meets the claims requirements. Consequently, this limitation is not met by any of the Adveractive games or baubles.

220. Further, the claim requires a cursor display instruction to specify the appearance of a visual image. Because none of the Adveractive games or baubles include a cursor display instruction that specifies the shape and appearance of a visual image meeting the claim requirements, this limitation is not met.

221. Dr. Terveen identifies in ¶ 360 as meeting this limitation "the code that includes instructions that identify the cast members that are to be used for the cursor, and, therefore, specify the appearance of a visual image, i.e., the cursor." He also states this limitation is met by "image components of the DCR cast that were to be used as visual images for the cursor." Likewise, he identifies cursor display instructions "that specify an appearance of a visual image that will be used to modify the cursor image (as recited in the next claim element)." He does not however, identify in his report for any of these images any cursor display instructions that specify a visual image that is not a fixed part of the cursor image. Because no such cursor display instructions exist, this limitation is not met in any of the Adveractive games or baubles.

iii. Limitation 35[b]: following the receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image,

iv. Limitation 35[c]: wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image.

222. Dr. Terveen identifies no cursor display instructions that modify the cursor image to include a visual image that would meet the requirement of the claim. In every instance, Dr. Terveen cites an image that is the modified cursor image and therefore cannot meet the "tracks a movement" requirement of limitation 35[c].

223. For example, in the Cosmic Bowling game, Dr. Terveen recites the following

supposed cursor modifications: (i) Cursor changes to pointing hand when mouse is rolled over lane arrows; (ii) Cursor changes to pointing hand when mouse is rolled over handedness change button; (iii) Cursor changes to open hand when placed over Rhino, Helix, or Zone ball at top of game; iv) Cursor changes to open hand when placed over balls in ball return; (v) Cursor changes to hand with fingers in ball when ball is selected; (vi) Cursor changes to pointing hand when mouse is rolled over "Instructions" or "New Game."

224. While I agree that Dr. Terveen identifies cursor display instructions to modify cursor images, he does not identify the cursor display instructions that are processed to modify the cursor image to include a visual image as required by the claim, and I see no instructions for such included visual images in the Brunswick Cosmic Bowling game.

225. Dr. Terveen also identifies the bowling balls as part of the cursor image. However, being a fixed part of the cursor image does not meet the requirements of this claim. Also, the attachment of the ball to the modified cursor is not a result of a cursor display instruction but instead is a drag-and-drop operation requiring a mouse down selection. Likewise, the ball's size does not change based upon a cursor display instruction but rather a drag-and-drop operation requiring holding the mouse button down. Any movement of the ball is the result of a drag-and-drop operation and not the result of a cursor modification instruction. Moreover, the ball is fixed relative to the modified cursor image and simply moves with it, so it is not an included visual images that tracks the movement.

226. Consequently, there are no cursor display instructions to modify the cursor image to include a visual image that meets the requirements of the visual image, including limitation 35[c].

227. In connection with Halloween Haunt, Dr. Terveen identifies the modified cursor

image as the hand and the pie, which are fixed relative to each other. However, the cursor modification is a result of the user selection of the pie to be thrown (a drag-and-drop operation) and not a result of a cursor display instruction. Moreover, the pie position is fixed relative to the modified cursor therefore does not track the movement of the modified cursor image. Therefore, this limitation is not met because there are no cursor display instructions to modify the cursor image to include a visual image that meets the requirements of the claim.

228. Regarding Fearless Fergie, each visual image identified by Dr. Terveen is the cat head itself; he identifies no included visual image. Moreover, any changes that occur when the cat head is selected to be displayed take place "whether the cat's head is being moved horizontally by the user or not." *See* Terveen Rpt. at ¶ 217. Therefore, changes to the cat's head are based upon the position of the Fearless Fergie image, not based upon the movement of the cat head. There is no cursor display instruction to modify the cursor to include a visual image that meets the requirements of the claim, including limitation 35[c].

229. Regarding the Hummingbirds game, there is no cursor modification at all and there exists no cursor display instruction to modify the cursor to include any plant or Hummingbird image. The plant is simply the object of a drag-and-drop operation and can be moved -- it is not included as a visual image of a modified cursor image as required by the claim. Nor are the Hummingbirds. They are merely game objects whose actions are sometimes affected by the location of the plant.

230. Regarding the Prowler bauble, there is no cursor modification and there exist no cursor display instructions to modify the cursor to include the Prowler image.

231. I address separately Dr. Terveen's ¶¶ 370 and 371. Regarding ¶ 370, the claim requires that the visual image include promotional material. For the purposes of the claim,

whether or not there is promotional material displayed elsewhere is irrelevant. Nor is it relevant that "the Adveractive games and baubles were designed to promote Adveractive's multimedia business," as Dr. Terveen says. Wholly missing from Dr. Terveen's analysis is any identification of a modified cursor image that includes a visual image that includes promotional material. As I have previously explained, no such visual image exists.

232. Regarding his ¶ 271, I disagree that the claim element "the visual image tracks a movement of the modified cursor image" is a "functional tautology." It may be in the manner interpreted by Dr. Terveen, but a modified cursor image can include a visual image that tracks its movement in two non-tautological ways taught by the Common Specification. I believe that, by "included," Dr. Terveen is referring to something that is a fixed part or otherwise fixed relative to the modified cursor image, given his examples. But such an interpretation would render the claim language added by the Examiner meaningless in the face of prior art distinguished by the Examiner that might otherwise meet Dr. Terveen's interpretation.

233. Dr. Terveen's interpretation that something is a fixed part of, or otherwise fixed relative to, the modified cursor image is not what the Examiner meant by the added "tracks a movement" language. Rather, this claim covers the disclosed embodiments wherein there is either a component of the cursor image that is not fixed relative thereto, for example, the straw that keeps reorienting towards the Fizzy Cola bottle, as described, or a satellite image that appears as part of the cursor modification and moves relative to the cursor movement. *See* '102 Patent, 17:-15-31: "Alternatively, Fizzy Cola, on its own site, or homepage, might have a picture of a bottle of Fizzy in the middle of the page (in the display data). A dynamic cursor image could then be used to show a person holding a straw in such a way that the straw always points from the user toward the top of the Fizzy bottle, no matter where the cursor moves on

the screen. The straw, in this case, might be 'attached' to the cursor image (part of the same image) or could be separate, 'satellite' image, a 'sprite,' whose movement on the screen (in this case) is related to the movement of the cursor. Sprites, which can appear and disappear as desired, can enhance the invention by enabling the use of graphical elements which are associated with the cursor, but which reside outside the limited cursor 'space' (which in some systems may be, at maximum, 32 by 32 pixels). For the purposes of the invention, however, there should be no limitation to the size of the cursor."

D. Non-Obviousness over Adveractive Games in combination with the "Knowledge of a POSITA"

234. I disagree with Dr. Terveen's conclusion that a "POSITA would have found it obvious to modify Adveractive Games such that the data used in the Adveractive Games is provided by the server a serial fashion in response to a need for the data, rather than in a single DCR file at the first access to the webpage." Terveen Rpt. at ¶ 381.

235. The download of a game in 1997, such as one of the games in the "Adveractive Games," would be done in a single file download so as to enable the playing of the entire game without delays for downloading new content. Furthermore, it would also allow offline playing of the game in absence of any network connection. To introduce unintended 'lag' (the latency between user input and reaction of the server supporting the task) into the "Adveractive Games" would render unplayable these primarily timing and precision based games.

236. As such, there would have been no motivation to alter the Adveractive games in the manner suggested by Dr. Terveen. This is particularly true for internet speeds in 1997, which primarily used dial-up connections (which, on average, were less than 35 kbps). Dr. Terveen acknowledges this limitation of internet speeds in the 1990s. Terveen Rpt. at ¶ 383.

E. Non-Obviousness over Adveractive Games (Cosmic Bowling) in combination with "Knowledge of a POSITA" and/or Malamud

237. Regarding Dr. Terveen's ¶¶ 399-456, there is nothing in my opinions that would suggest or require that the explanatory box in the Brunswick Cosmic Bowling game be an included image of a modified cursor image or that it become an included image as a result of a cursor display instruction. Further, there would be no motivation to move the explanatory boxes (or the text) relative to the cursor movement as the box is already conveniently located outside the bowling lane and there is no need for it to follow the cursor's movement. Also, there would be no motivation to move the explanatory boxes (or the text) relative to the cursor movement because the text is already positioned in a readable position and it would prevent readability if that text were somehow to be moved around in the box to track cursor movement. Finally, the inclusion of the explanatory box with the cursor would ruin the bowling game, as it would obstruct a player's view of the lane. I therefore disagree with Dr. Terveen's obviousness conclusions therein for these additional reasons. And I have already addressed Dr. Terveen's "functional tautology" argument.

F. Non-Obviousness over Nielsen in combination with Malamud

238. I will first make a few general observations before addressing Dr. Terveen's opinions in his ¶¶ 457-562.

239. Nielsen is directed to a specific extension of the HTML standard that added a feature called "tooltips." A webpage developer could place into an HTML file, adjacent to any webpage content they wished to display, a tooltip tag and enter content they wish to be displayed in a tooltip box when a cursor is positioned over particular webpage content for a specified period of time. As Nielsen explains:

> The present invention allows for the use of tooltips in Webpages. Thus, any information displayed on display device 160 by browser 130 can have a tooltip associated therewith. When the user places the cursor on a predetermined location on display device 160 for a predetermined period of time, tooltip text is displayed, providing further explanation of the information at the predetermined location. In a preferred embodiment, Webpages Specified using the present invention can still be displayed using Web browsers that have not been enhanced to recognize tooltips because these browsers will simply ignore the tooltips tag.

Nielsen at 3:34-45.

240. Thus, the web developer is able to insert tooltip tags into the webpage's HTML file



Fig. 2(a)



Fig. 2(b)



Fig. 2(c)



Fig. 2(d)

next to various pieces of webpage text for which they wish a tooltip to be displayed. Because Nielsen's specification is directed to explaining this new feature of HTML, and its use requires proper use of HTML language, a great deal of Nielsen's specification is directed to the various valid HTML formats for tooltip tags, as show in FIGS. 2(a)-2(d):

241. As shown, the webpage developer can insert into the webpage's HTML file a pair of tooltip tags around the portion of webpage text for which a tooltip is desired to be displayed,

specify the tooltip text, and specify whether this tooltip text should be displayed over every instance of the webpage text.

242. In a primary example given, shown in FIG. 4, the tooltip text "London Heathrow" will appear over the webpage text "LHR" when a cursor has been positioned somewhere over "LHR" for a sufficient length of time. Likewise, the tooltip text "Universal Airlines" will appear above the webpage text "UA" and the tooltip text "San Francisco" will appear over the webpage text "SFO."

243. As Nielsen describes, all the webpage developer has to do is enter the following metadata into the HTML file for this to occur:

> <TOOLTIP TXT-"Universal Airlines'
> EVERYWHERE > UA&/TOOLTIP>
> Feb. 15, 1996 0931 <TOOLTIP
> TXT-"London Heathrow
> EVERYWHERE > LHR </TOOLTIP>
> <TOOLTIP TXT-"San Francisco'
> EVERYWHERE > SFO &/TOOLTIP>
> 5368 6710 12078
>
> Nielsen at 4:58-67.

244. Because browsers that support HMTL include code to execute these HTML instructions, the webpage developer does not have to provide code to the browser to make a tooltip appear on the user's display, but only supplies data surrounded by tags.

245. Nielsen is not directed to modifying cursor images. Figures 6a, 6b, and 7 provide flowcharts that do not describe methods for modifying a cursor using a conventional client-server architecture. There is no description of any cursor modification. And a tooltip is not a cursor nor is it a cursor image. It is simply a block of text that is displayed next to an associated webpage object. The tooltip does not move, nor would it make any sense in Nielsen for it to move because the point of Nielsen is to show the tooltip near the associated webpage text.

246. Rather, Nielsen is directed to the use of a special HTML extension added to the HTML standard to displays "tooltips." Similar to Malamud's application taking advantage of an embellished operating system that supports information cursors, Nielsen discloses the use of this special extension built into HTML to display the "tooltip." Specifically, Nielsen discloses that a web designer can add a "Tooltip" tag into a webpage's HTML that invokes the tooltip functionality of HTML and "specify the tooltip text that will be displayed when the cursor reaches the specified text." The tooltip does not modify or transform a cursor image. Rather, a tooltip text "preferably will be displayed in proximity to" some associated text field when the cursor is moved over that text field. This is shown and described in Nielsen's Fig. 8 and at 6:21-32.

247. Nielsen is narrowly directed to a specific HTML extension in which the tooltip is automatically generated by the HTML; all the programmer has to do within the webpage's HTML file is to enter, next to the webpage text for which a tooltip is directed, two tooltip tags and the desired tooltip text between the two tags. The tooltip tags have nothing to do with modifying a cursor image and Nielsen's tooltips are very different in purpose to the cursor image because the tooltip is only relevant when in proximity to a given relevant word. Therefore, you would not want the tooltip to be displayed when the cursor image is located in a position that is not proximate to the word.

248. Malamud is likewise narrowly directed to an embellished operating system (e.g., some modified version of Windows 3.1) that is specifically built to support the information cursor types used by the Malamud application. In other words, the operating system already has been specifically coded with instructions to display the user designated type of information cursor and the information input by the user to display within the information cursor.

249. Furthermore, the tooltip taught by Nielsen does not appear in response to movement of a cursor over a display of information. Rather it is the absence of movement when the cursor is positioned over relevant text that makes a tooltip appear because Nielsen teaches that a cursor must be positioned over the associated webpage content for a specified period of time before the appearance of a tooltip is triggered. Nielsen at 3:34-45.

250. In contrast, the Common Specification provides extensive teachings on how to implement a cursor image modification. For example, the description spanning from 8:39-11:60 (and associated figures) specifies the required structure of an HTML file that implements the cursor image modification.

251. The disparate and limited respective environments of Nielsen and Malamud reinforce that a POSITA would not have been motivated to combine them to arrive at the Asserted Claims.

252. Therefore in my opinion there is not only no support for the suggested combination but there is no reasonable expectation that a tooltip could even successfully fulfill its intended function if displayed in a modified cursor.

253. While I agree that Nielsen does disclose sending specific webpage text for display, and tooltip tag pairs with tooltip text between them that instructs the browser to display the tooltip text when the cursor is positioned over that specific webpage (*see* 1:18-26, 1:51-57, 3:36-41, 3:46-4:7), for at least the reasons given above, the only motivation or expectation of success I see in the record comes from the Common Specification itself. A POSITA would not have been motivated to modify Nielsen's tooltip into a cursor modification nor would a POSITA have had any reasonable expectation that the tooltips would function as intended if displayed over unrelated text. Indeed, given the nature of a tooltip being relevant only to a

specific piece of text such a modification would be unworkable because a tooltip would be displayed when the cursor was positioned over unrelated text.

254. I am advised that both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's own disclosure.

255. But even had there been any motivation to combine Nielsen and Malamud, I do not agree that a POSITA would modify an HTML extension to perform a cursor image modification as taught by the Common Specification or modify an equally narrowly tailored Windows application designed to work in conjunction with a specifically embellished operating system to implement a cursor display instruction and cursor display code in an HTML setting with a reasonable expectation of success to arrive at any of the Asserted Claims.

256. Regarding my disagreement with Dr. Terveen's opinions that claim 72 is rendered obvious by a combination of Nielsen and Malamud, I offer the following additional reasons why it is not.

257. An online version of Malamud is not obvious because it would require access to a client's files structure names and icons to operate in the manner suggested by Dr. Terveen (and without the teachings of the common specification of the Asserted Patents) because it would require a browser supporting Malamud's functionality meaning that the browser would have to be embellished in the same way as the specialized operating system of Malamud that supports information cursors so that Malamud's application can interact with it. That is, the server purportedly providing the cursor modifications would have no way of knowing the particular file names contained in any directory on the client.

258. The TOOLTIP tag in the HTML do not constitute cursor display instructions and there would be no motivation to modify them to be cursor display instructions for the reasons

I previously stated because they already by design only appear when a cursor is hovering over the associated object for which there is a TOOLTIP. Also, the fact that the TOOLTIP is not displayed when the cursor has moved over the object but rather only when it has been positioned over an object is by design because it is not desirable for a TOOLTIP to be instantly displayed when the cursor has been moved over the object. Rather, the user must indicate a desire to see the tooltip by having hovered over the object over a specific period of time. This is contrary to the requirement of claim 72 that the cursor modification be responsive to movement of the initial cursor image over the object, *i.e.*, there is no pause.

259. It is for the same reason also contrary to the teaching of Nielsen to always show a TOOLTIP box with some content unrelated to the object that the cursor has been moved over or to even to keep having TOOLTIP instantly appear as you move a cursor around the screen. It would be annoying and create confusion, particularly if the TOOLTIP contained a graphic or was large or in a densely populated screen. Such a modification would simply be unworkable. Eliminating the pause before the TOOLTIP is displayed would be unworkable for the same reasons.

260. Consequently, I disagree fundamentally with Dr. Terveen's analysis that this combination renders claim 72 obvious.

'102 Patent, Claim 72

i. Limitation 72[Preamble] A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:

261. Nielsen does not teach a modified cursor, but rather teaches a tooltip in which text and/or a graphic relating to the object to which the cursor is pointing is displayed in proximity to the displayed object to which the cursor is pointing, instead of being displayed in association

with the cursor.

262. Nielsen is not directed to modifying cursor images. Rather, Nielsen is directed to the use of a special HTML extension added to the HTML standard to displays "tooltips." Similar to Malamud's application taking advantage of an embellished operating system that supports information cursors, Nielsen discloses the use of this special extension built into HTML to display the "tooltip." Specifically, Nielsen discloses that a web designer can add a "Tooltip" tag into a webpage's HTML that invokes the tooltip functionality of HTML and "specify the tooltip text that will be displayed when the cursor reaches the specified text." The tooltip does not modify or transform a cursor image. Rather, a tooltip text "preferably will be displayed in proximity to" some associated text field when the cursor is moved over that text field. This is shown and described in Nielsen's Fig. 8 and at 6:21-32.

263. A tooltip is not a cursor, nor is it a cursor image. It is simply a block of text that is displayed next to an associated webpage object.

264. There would be no motivation to combine Nielsen and Malamud. The tooltip does not move, nor would it make any sense in Nielsen for it to move because the point of Nielsen is to only show the tooltip when the cursor is near the associated text.

265. The disparate and limited respective environments of Nielsen and Malamud reinforce that a POSITA would not have been motivated to combine them to arrive at claim 72. The HTML "tooltip" extension is specifically designed to only display the tooltip when the cursor is over the associated webpage text, so the user's attention is already focused on the relevant webpage text for which it is desirable to show a tooltip. It would be contrary to the teachings of Nielsen to show the tooltip any other time because the cursor may be far away from the relevant text. Imagine, for example, the tooltip displaying "London Heathrow" when

the cursor is not positioned over the "LHR" text but rather positioned over some other webpage text representing another airport or some other unrelated text. Now instead of a relevant tooltip, there would only be user confusion. Thus, there is no support for the suggested combination and there is no reasonable expectation that a tooltip could even successfully fulfill its intended function if displayed in a modified cursor according to Malamud.

266. The suggestion to combine references and the reasonable expectation of success of the combination must be founded in the prior art, not in the applicant's disclosure. A POSITA would not have been motivated to transform Nielsen's tooltip into a cursor modification, nor would a POSITA have had any reasonable expectation that the tooltips would function as intended if displayed over unrelated text. First, Nielsen only instructs a POSITA that there has been an addition to the HTML standard that can be used by a webpage developer so that metadata (*i.e.*, a pair of tooltip tags bracketing tooltip content to be displayed) can be inserted in an HTML file next to webpage content and instruct the browser to display a tooltip content next to that webpage content, and only when the cursor is stopped for a minimum period of time over that webpage content. It does not suggest modifying the cursor or instruct how to do so.

267. Second, given the nature of a tooltip, the tooltip is relevant only to specific webpage content and therefore only displayed next to that specific content and only when the user's attention is already focused on that webpage content because the cursor is hovering over that webpage content. For example, a tooltip for "London Heathrow" is only relevant to the abbreviation "LHR" and therefore "London Heathrow" is only displayed when the cursor hovers over the text "LHR" for a sufficient period of time to indicate that the user's attention is focused on that specific text. It would not be obvious to replace the tooltip with a modified

cursor and the POSITA would be not motivated to do so because nobody would want the tooltip "London Heathrow" to be displayed as a modified cursor image when the cursor was moved over the letters "SFO" or any other text than "LHR" (or anywhere else on the webpage page far from the letters "LHR.") Nor would a POSITA be motivated to display tooltips in response to the movement of the cursor over some triggering webpage content, but rather the exact opposite -- the cessation of cursor movement for a specified minimum period of time. Given the disparate reasons for display and tooltip and a modified cursor image, trying to substitute a cursor modification for the display of a tooltip would be unworkable because a tooltip would be displayed as the cursor was moving over unrelated text.

268. Even had there been any motivation to combine Nielsen and Malamud, neither Nielsen nor Malamud teaches a POSITA to modify HTML to include requirements of an embellished form of Windows to support Malamud's application with a reasonable expectation of success.

ii. Limitation 72[c][i]: transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction, wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal:

269. As discussed both generally and specifically above, there was no motivation for a POSITA to modify Nielsen's tooltips to make them part of a modified cursor image.

iii. Limitation 72[c][ii]: wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal:

270. As discussed both generally and specifically above, there was no motivation to

display tooltips in response to movement of the cursor, and, in fact, Nielsen taught away from such a requirement, because Nielsen deliberately provided a pause so that the user must stop moving the cursor (i.e., hover the cursor) over the associated text for a sufficient period of time before the tooltip was displayed. A POSITA would understand that this was to prevent the tooltip from being displayed in response to mere motion because then tooltips would appear anytime a cursor was moved over an associated object (i.e., an object having an associated tooltip) which would cause confusion and disruption to workflow, in particular when graphics were involved.

'449 Patent, Claims 1, 27, 38, and 53

271. For the same reasons that I have both generally and specifically set forth above, I disagree with Dr. Terveen's assertions as to this combination rendering claims 1, 27, 38 and 53 obvious, given their similar scope and requirements.

'241 Patent, Claim 35

272. My opinions regarding the lack of motivation to combine these references, the lack of any reasonable expectation of success, and the unworkability of their combination applies also to claim 35 of the '241 Patent. Therefore, I disagree with Dr. Terveen's opinion that this combination renders claim 35 obvious given both the general and specific opinions I have previously expressed regarding them including in the context of claim 72.

273. Additionally, I disagree fundamentally with Dr. Terveen's "functional tautology" premise regarding claim 35, and therefore do not subscribe to any of his analysis stemming from that premise. Neither Malamud nor Nielsen discloses a cursor modification such that the modified cursor includes a visual image that tracks the modified cursor image unless read using Dr. Terveen's incorrect tautological interpretation of the claim. As I have previously

discussed, Dr. Terveen's interpretation of the requirements of this claim would fail to give meaning to "tracks a movement" and "to include a visual image" claim elements, would contradict the file history, and would read out embodiments from the specification.

274. I also reiterate my disagreement with Dr. Terveen's notion that a POSITA could with reasonable expectation of success simply adapt HTML to support an information cursor to make it comparable to the specialized form of Windows for which Malamud was adapted to be used. HTML is a standard protocol, and the idea of a POSITA changing it to make such support would involve undue effort to say the least. And there is simply no teaching in Malamud to even explain how Windows is modified to support information cursors in order to support Malamud's functionality.

G. Anticipation of Claim 35 of the '241 Patent by the '102 Patent

275. I have been informed by Counsel that this issue is currently the subject of a Motion for Summary Judgment filed by Defendant Amazon. As the dispute over the priority date of the '241 Patent is an entirely legal question, I offer no technical opinions in this regard other than that the specifications are the same and the Asserted Claim of the '241 Patent has different requirements than the Asserted Claims of the '102 and '449 Patents, in the ways I have previously discussed, particularly in that the former has a dynamic requirement for the included "visual image" via the "tracks a movement" limitation that is not present for the "specific image" element in the latter.

H. Non-Obviousness of Claim 35 of the '241 Patent in view of Hama

276. I offer the following general observations regarding Hama. First, there is no disclosure of an initial or a "modified cursor" in Hama. Hama is an application in which there is only one cursor on the screen, and that cursor is never modified, regardless of its position.

Therefore, there are no "cursor display instructions" either for modifying the cursor image to include a visual image.

277. I disagree with Dr. Terveen's statement in ¶ 586 that "[w]hen the user moves the cursor over the cursor image, the cursor changes to the shape of a rectangle." There is no disclosure of any such "change."

278. I disagree with Dr. Terveen's conclusion in ¶ 589 because Hama fails to meet even the preamble, as no cursor image is ever modified.

279. I disagree with Dr. Terveen's ¶¶ 590-593 regarding limitation 35[a], that Hama discloses receiving content from another server because Hama does not disclose a server at all. Additionally, Hama does not disclose any "content information including at least one cursor display instruction."

280. Regarding Dr. Terveen's ¶¶ 594-597 regarding limitation 35[b], I disagree. Since 35[a] is not disclosed, 35[b] cannot be disclosed because there is no "receipt of the content information" and no cursor display instructions for "modifying the cursor image."

281. Regarding ¶¶ 598-602 regarding limitation 35[c], there is no "modified cursor image" disclosed in Hama at all.

i. [35 Preamble]: A system for modifying a cursor image, comprising:

282. There is no disclosure in Hama of a system for modifying a cursor image. Dr. Terveen cites to the '102 Patent, and not Hama. Terveen Rpt. at ¶ 589. Assuming that this is not merely a typographical error, Dr. Terveen admits that Hama does not disclose a system for modifying a cursor image. To the extent the '102 Patent is not prior art, Dr. Terveen has not alleged that Hama renders obvious each limitation of claim 35 of the '241 Patent.

ii. Limitation 35[a]: at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image:

283. To the extent that Hama discloses a server, such a server supplies no cursor display instruction specifying the appearance of a visual image because there is no cursor modification, and therefore no visual image to specify in connection therewith.

iii. Limitation 35[b]: following the receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image:

284. Nothing Dr. Terveen cites in connection with this limitation discloses modifying the cursor image or instructions to modify the cursor image following the receipt of the content information. There is no cursor modification after the receipt of the content information, nor does Dr. Terveen even assert that there is. There is therefore also no cursor modification after the receipt of the content information, so there is no modified cursor image at all.

iv. Limitation 35[c]: wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image.

285. Again, I reiterate my disagreement with Dr. Terveen's opinion that an included image is any fixed whole or part of a cursor image because I do not subscribe to the idea that the addition of the "tracks a movement" language by the Examiner was a functional tautology and "does not place any further restrictions on claim 35," as Dr. Terveen states in his ¶ 600.

286. Dr. Terveen posits no changes to Hama so there is nothing to address on that basis, such as any motivation to change Hama, or to combine Hama with alleged prior art (such as the '102 Patent).

I. Non-Obviousness over Kojima

'102 Patent, Claim 72

287. Kojima presents a system in which a user "presses a magnifying button, for

example, provided on the pointing device 18 for commanding the portion (the area 126) [of the display image 122 on the display 20] to be magnified." In response, the display control means reads out the coordinates (posx, posy) 129 of the cursor 121 and reads out image data from the original image data associated with the area to be magnified 126 and commands the enlarging/reducing processor 15 to generate a magnified image 125 while lowering the display density of the portion of the image below it. *See* Kojima, Fig. 3 and 4:61-5:33. This is also shown in Fig. 4, in which a magnified image 125 of part of the display image 122 is displayed while the area below the enlarged image 125 is displayed with a lower density.

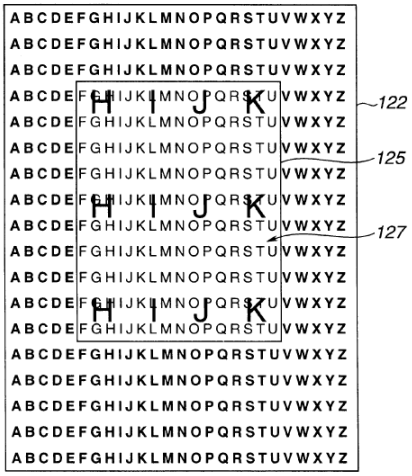


FIG.4

i. Limitation 72[Preamble] A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:

288. Kojima discloses no cursor image modification whatsoever. Therefore, I disagree with Dr. Terveen's statement that "Kojima discloses modifying an initial cursor displayed on a display of a user terminal." Terveen Rpt. at ¶ 607. There is no disclosure of any such "modifying" and there are no instructions from a server to modify the cursor. As such, Kojima, like Hama, does not meet the preamble.

289. Nothing in my infringement opinion suggests that any transparent image moving over another image is a modified image, nor would such a situation meet the requirements of claim 72 regarding cursor modification, as Dr. Terveen suggests in his ¶ 606.

ii. Limitations 72 [a] [b] [c] [d] and [e]:

290. Regarding Dr. Terveen's ¶¶ 607-615 addressing limitations 72[a]-72[b], there is no modified cursor image. Fig. 3 clearly shows that 126 is simply the image to be enlarged (aw x ah) and 125 is simply the enlarged image itself having the portion of the text displayed below it faded to create the superimposed image 127. Neither of these areas is disclosed as represented by a cursor image, much less a modified cursor image. Indeed, Kojima never once mentions a cursor image, much less modifying it, and never describes either 127, 125 or 126 as anything other than images or areas. There is no express or inherent request being made in Kojima for information that results in a cursor display instruction or cursor image data being sent from the server because there is nothing being sent back from any server in Kojima to modify the cursor image. Additionally, I disagree with Dr. Terveen's statement in his ¶ 615 equating a GET request to a cursor display instruction because Kojima discloses no specific image that defines the shape and appearance of a cursor image. Moreover, a GET request goes from the client to the server, not the other way around.

291. Regarding Dr. Terveen's ¶¶ 616-618 addressing limitation 72[c], there are no cursor display instructions transmitted from the server and processed by the client to modify the cursor image into the shape and appearance of a specific image because there is no express or inherent disclosure of cursor modification at all. To be clear, no cursor modification is described anywhere in Kojima. And while cursor 121 is not shown in Fig. 4, patent drawings often do not show every disclosed element. What is clear however, is that reference numeral 127 is describing the superimposed image, i.e., the enlarged image 125 with the text below it

displayed with less weight. There is no disclosure of any cursor image being modified. Moreover, even if image 127 is considered to have a border, which I do not believe it clearly does, then that border also appears in Fig. 3 and there has been no modification to make it appear. In other words, if it exists at all, the border always exists in Kojima's enlargement tool. Dr. Terveen's statement in ¶ 618 regarding his posited cursor modification is not supported by either the drawing or the description in Kojima's specification, and I disagree with it and deny that this claim limitation is met at all.

292. Regarding Dr. Terveen's ¶¶ 623-627 concerning limitations 72[d] and 72[e], there is no cursor display instruction, there is no cursor modification and thus there is no specific image that is part of the cursor modification, as I have previously explained. Additionally, there is no cursor modification based upon moving the cursor over the content to which a specific image that comprises the shape and appearance of a modified cursor image corresponds. Moreover, to the extent that the superimposed image 127 can be said to have a border, that border is not part of a cursor modification or a cursor display instruction. It is either there or not there. If it is there, there is no reason to modify it. Therefore, I disagree with this element being met or being rendered obvious.

293. To the extent that Dr. Terveen has suggested modifications to Kojima, these modifications would not have been motivated or obvious to a POSITA because they would have been unnecessary or redundant.

'449 Patent, Claims 1, 27, 38, and 53

294. I disagree with Dr. Terveen's ¶¶ 629-665 regarding Asserted Claims 1, 27, 38, and 53 of the '449 Patent for the same reasons as expressed in my above statements concerning Claim 72 of the '102 Patent.

‘241 Patent, Claim 35

295. I disagree with Dr. Terveen’s ¶¶ 659-665 regarding claim 35 for the same reasons as expressed in my above statements concerning claim 72.

J. Non-Obviousness of Claim 35 of the ’241 Patent in view of Rakavy

296. While I don’t disagree that Rakavy discloses a system in which an advertising cursor could be displayed, I disagree that Rakavy either discloses or renders obvious claim 35. There is no disclosure of including a visual image that is not fixed to the modified cursor image but tracks it in Rakavy. In connection with limitation 35[b], Dr. Terveen only points to a disclosure in Rakavy of displaying bitmaps associated with an advertisement, such as a modified cursor that includes an advertiser’s logo. But that image is merely a fixed component of the cursor image and is not an included visual image as required by the claim. Dr. Terveen acknowledges that the modified logo “could be an advertiser’s logo or other symbol.” Terveen Rpt. at ¶ 689. But a fixed component of the modified cursor will not meet limitation 35[c] for all the reasons I have previously discussed in connection with Claim 35.

297. This shortcoming in Rakavy is not addressed by Dr. Terveen’s explanation in his ¶ 691 that a time-dependent cursor modification would include a visual image that would track movement of the modified cursor because, for that time period the advertising image would simply *be* the modified cursor; it would not be an included visual image that tracks it. Moreover, Dr. Terveen provides no support for positing in his ¶ 692 that Rakavy’s disclosure that an advertisement could have its position fixed relative to a window would render obvious that the advertisement could be a cursor image because he posits a situation in which the modified cursor image is either tracking a window or tracking itself, neither of which meets the claim limitation or demonstrably renders it obvious. Windows are not cursors.

K. Non-Obviousness-Type Double Patenting of Claim 35 of the ’241 Patent

298. While I understand that double patenting is ultimately a question of law, I offer a few technical opinions because I disagree that claim 2 of the ’449 Patent is not patentably distinct from claim 35 of the ’241 Patent. Here again, Dr. Terveen’s analysis is premised by his, in my opinion mistaken, view that the included visual image is met by a fixed component of the modified cursor image. Terveen Rpt. at ¶ 715. (“Because the visual image is included in the modified cursor image, the visual image constitutes all or part of the modified cursor image. Therefore, the visual image must track the movement of the modified cursor mage, and this limitation does not place any further restrictions on claim 35.")

299. I disagree with that premise for the reasons I have previously stated. I also note that the USPTO rejected then-pending claims 1-6 of the ’241 Patent application on double patenting grounds, and those claims were cancelled. The Examiner added the “tracks a movement” limitation and allowed the amended claims over prior art that would meet Dr. Terveen’s argument (for the reasons I have previously discussed). *See,* Office Action dated December 24, 2008, page 2. Therefore, I disagree with Dr. Terveen’s conclusions regarding Elements 35[b] and [c], because they include the limitation which changes the nature of the claim. I also reiterate that the Examiner also found the claims patentably distinct, even having reviewed the application for such.

L. Secondary considerations of Non-Obviousness

300. In addition to not being disclosed or rendered obvious by the prior art, I do believe that the long-felt need for Lexos Media’s claimed technology is demonstrated by the fact that Amazon and many other online retailers including the other defendants have used it for many years and continue to do so.

301. I also believe the fact that surveys conducted in this case, show a long-felt need because customers became more comfortable buying on-line when customers could use their modified cursors to help simulate the experience of inspecting a product to simulate the brick-and-mortar experience of inspecting a product. The technology is specifically designed to work for on-line retailers.

302. Other advantages of the technology that demonstrate its long-felt need are recited in my infringement report, so I will not repeat them here but incorporate the contents of that report into this report. My infringement report also expresses the reasons for my disagreement with Dr. Terveen's premise that the Defendants are not practicing the claimed technology and therefore their usage does not demonstrate long-felt need.

303. In sum, while I do not believe that any of the asserted prior art renders any of the Asserted Claims obvious in the first instance, the long-felt need met by the claimed technology even further demonstrates the non-obviousness of the claimed technology.

VI. CONCLUSIONS

304. The Asserted Claims are not invalid for any of the reasons asserted by Dr. Terveen.

305. The Asserted Claims are not invalid due to obviousness in view of Malamud.

306. The Asserted Claims are not anticipated by the Adveractive games.

307. The Asserted Claims are not invalid due to obviousness over the Adveractive games in view of the knowledge of a POSITA.

308. The Asserted Claims are not invalid due to obviousness over the Cosmic Bowling Adveractive game in view of the knowledge of a POSITA and Malamud.

309. The Asserted Claims are not invalid due to obviousness over Nielson and Malamud.

310. Claim 35 of the '241 Patent is not anticipated by the '102 Patent.

311. Claim 35 of the ‘241 Patent is not invalid due to obviousness in view of Hama.

312. The Asserted Claims are not invalid due to obviousness in view of Kojima.

313. Claim 35 of the ‘241 Patent is not invalid due to obviousness in view of Rakavy.

314. Claim 35 of the ‘241 Patent is not invalid due to obviousness-type double patenting.

315. There are secondary indicia of non-obviousness.

Executed October 25, 2023 at Pittsburgh, Pennsylvania.



Michael I. Shamos

Exhibit E

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

LEXOS MEDIA IP. LLC **v.** **AMAZON.COM, INC.**	**Civil Action No.: 2:22-CV-00169-JRG** **(Lead Case)**
LEXOS MEDIA IP. LLC **v.** **TARGET CORPORATION**	**Civil Action No.: 2:22-CV-00175-JRG** **(Member Case)**
LEXOS MEDIA IP. LLC **v.** **OFFICE DEPOT, LLC**	**Civil Action No.: 2:22-CV-00273-JRG** **(Member Case)**

REBUTTAL REPORT OF DR. MICHAEL SHAMOS, PH.D., J.D TO MR. RICHARD GOODIN'S REPORT CONCERNING THE VALIDITY OF U.S. PATENT NOS. 5,995,102, 6,118,449, AND 7,975,241

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G. "a system for modifying a cursor image […]" 38

H. Enablement 38

VII. Non-Obviousness of the Asserted Claims in view of Malamud in combination with the knowledge of a POSITA 42

A. Limitation 72[a]: receiving a request at said at least one server to provide specified content information to said user terminal; 47

B. Limitation 72[b]: providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image, and 48

C. 72[c] transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction, ...49

D. 72[d] wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal, and 72[e] wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal. 49

E. Limitation 35[a]: at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image....51

F. Limitation 35[b]: following the receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image 52

G. Limitation 35[c]: wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image 52

VIII. Non-Obviousness of the Asserted Claims in view of Nielsen in combination with Malamud 53

IX. Non-Obviousness of the Asserted Claims in view of Pinard in combination with the knowledge of a POSITA 64

A. 1 [pre], '449 Patent: A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:.....65

B. 1[a], '449 Patent: cursor image data corresponding to said specific image; 65

C. 1[d], '449 Patent: said cursor display instructions and said cursor display code operable to cause said user terminal to display a modified cursor image on said user's display in the shape and appearance of said specific image, wherein said specified content information is transmitted to said remote user terminal by said first server computer responsive to a request from said user terminal for said specified content information, and.....65

D. 1[e], '449 Patent: wherein said specified content information further comprises information to be displayed on said display of said user's terminal, said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and 66

E. 1[f], '449 Patent: wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in response to movement of said cursor image over a display of said specific image in response to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal, and wherein said specific image relates to at least a portion of said information to be displayed on said display of said remote user's terminal. 66

F. '449 Patent, Claims 38, and 53 67

G. '241 Patent, Claim 35 67

H. 35[a] at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image.....67

I. 35[b] following receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to

include the visual image and displaying the modified cursor image,.....68

J. 35[c] wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image. 68

X. Non-Obviousness of Asserted Claims in view of Liu in combination with the knowledge of a POSITA.....69

A. '102 Patent, Claim 72 69

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A. Limitation 1[pre] A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:.....75

B. Limitation 1[a] cursor image data corresponding to said specific image; 75

C. 1[b] cursor display code, said cursor display code operable to modify said cursor image; and.....76

D. 1[c] a first server computer for transmitting specified content information to said remote user terminal, said specified content information including at least one cursor display instruction indicating a location of said cursor image data,.....76

E. 1[d] said cursor display instructions and said cursor display code operable to cause said user terminal to display a modified cursor image on said user's display in the shape and appearance of said specific image, wherein said specified content information is transmitted to said remote user terminal by said first server computer responsive to a request from said user terminal for said specified content information, and.....76

F. 1[e] wherein said specified content information further comprises information to be displayed on said display of said user's terminal, said specific image including content

corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and....76

G. 1[f] wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal, and wherein said specific image relates to at least a portion of said information to be displayed on said display of said remote user's terminal. 77

H. Claim 38: The server system in accordance with claim 27, wherein said specified content information is transmitted in the form of HTML files that define a web page. 77

I. 53[pre] A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:....78

J. 53[a] receiving a request at said at least one server to provide specified content information to said user terminal;....78

K. Limitation 53[b] providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image; and 78

L. 53[d] wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal, and 53[e] wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image in response to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal, and wherein said specific image has a shape and appearance relating to said information to be displayed. 79

M. Limitation 35[b] following receipt of the content information, the at least one client computer processing the

at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image, Limitation 35[c] wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image. 80

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XIII. CONCLUSIONS 81

Lexos Media Exhibit 2002, Page 307 of 527
Ebay, Inc. v. Lexos Media IP, LLC
IPR2024-00336 and IPR2024-00337

I. INTRODUCTION

1. My name is Michael Ian Shamos.

2. I have been retained by Plaintiff Lexos Media IP, LLC ("Lexos") to offer my opinion whether claim 72 of U.S. Patent 5,995,102 (the "'102 Patent"), claims 1, 38, and 53 of U.S. Patent 6,119,449 (the "'449 Patent"), and claim 35 of U.S. Patent 7,975,241 (the "'241 Patent") (collectively, the "Asserted Claims") are valid over the asserted Prior Art, and to respond to other invalidity assertions presented by Amazon.com, Inc., Office Depot, LLC, and Target Corporation (collectively, "Defendants") in separate reports directed to each Defendant.

3. More specifically, I have been retained to respond to the "Opening Expert Report of Dr. Loren Terveen," dated October 3, 2023 ("Terveen Report") and the "Opening Expert Report of Mr. Richard M. Goodin Regarding Invalidity of U.S. Patent Nos. 5,995,102, 6,118,449 and 7,975,241," also dated October 3, 2023 ("Goodin Report").

4. I am being compensated at my usual consulting rate of $600 per hour for my work related to this matter. My compensation does not depend on the contents of this report, any testimony I may provide, or the ultimate outcome of this matter. I do not have any direct financial interest in Plaintiff. It is conceivable that I may own mutual funds or investment accounts which themselves own shares of one or more Defendants. However, any such holdings collectively would not constitute a material portion of my net worth.

5. I reserve the right to supplement and/or amend my opinions in this report based on future positions taken by Defendants, their experts, additional documents, testimony, or other information provided by Defendants or their witnesses, any orders from the Court, or as otherwise necessary.

6. My opinions and the bases for my opinions are provided in this Report and Exhibits attached hereto. If I am called as a witness in the above-captioned litigation, I expect that I

will testify at trial regarding the matters expressed in this Report and any supplemental reports or declarations that I may prepare in connection with this litigation. I may also discuss work and publications in the field, and knowledge of the state of the art in the relevant time period. I may rely on handbooks, textbooks, technical literature, and the like to demonstrate the state of the art in the relevant time period and the evolution of relevant technologies. I expect that I may also testify to additional matters. These include, for example, matters addressed by the Defendants' experts or by their counsel.

7. When I say I "understand" a fact to be true or make a factual statement without a documentary citation that means I have been informed by counsel for Plaintiff that Plaintiff will provide proof at trial of such fact through admitted evidence. When I say that I "understand" a particular principle of law to be applicable, that means I have been informed by counsel for Plaintiff that I am to apply such principle of law.

8. In connection with my anticipated testimony, I may use as exhibits various documents produced in this case or publicly available that refer or relate to the matters discussed in this Report. I have not yet selected the particular exhibits that might be used.

9. In addition, I may create or assist in the creation of demonstrative evidence to assist me in testifying. For instance, at trial I may rely on software cited in this Report or compiled versions of related source code in order to illustrate the relevant functionality of those programs and aid the jury in their understanding of those programs. I may prepare static and/or animated exhibits that demonstrate Defendants' websites or show a video depicting their use. I may also rely on screen shots or documents to generate demonstratives showing how such websites operate. The Asserted Patents relate to certain technology, and I may prepare demonstrative exhibits describing how that technology operates.

10. I currently hold the title of Distinguished Career Professor in the School of Computer Science at Carnegie Mellon University in Pittsburgh, Pennsylvania. I am a member of two departments in that School, the Software and Societal Systems Department and the Language Technologies Institute. I was a founder and Co-Director of the Institute for eCommerce at Carnegie Mellon from 1998-2004 and from 2004-2018 was Director of the eBusiness Technology graduate program in the Carnegie Mellon University School of Computer Science. Since 2018, I have been Director of the M.S. in Artificial Intelligence and Innovation degree program at Carnegie Mellon.

11. I received an A.B. (1968) from Princeton University in Physics; an M.A. (1970) from Vassar College in Physics; an M.S. (1972) from American University in Technology of Management, a field that covers quantitative tools used in managing organizations, such as statistics, operations research and cost-benefit analysis; an M.S. (1973), and M.Phil. (1974) and a Ph.D. from Yale University in Computer Science; and a J.D. (1981) from Duquesne University.

12. I have taught graduate courses at Carnegie Mellon in Electronic Commerce, including eCommerce Technology, Electronic Payment Systems, Electronic Voting, Internet of Things, Electronic Payment Systems and eCommerce Law and Regulation, as well as Analysis of Algorithms. Since 2007 I have taught an annual course in Law of Computer Technology. I currently also teach Artificial Intelligence and Future Markets.

13. I am the author and lecturer in a 24-hour video course on Internet protocols and have taught computer networking, wireless communication, and Internet architecture since 1999.

14. From 2001-2021, I was a Visiting Professor at the University of Hong Kong, where

I teach an annual course in Electronic Payment Systems. This is one of only a handful of graduate courses taught on this subject in the world.

15. From 1979-1987 I was the founder and president of two computer software development companies in Pittsburgh, Pennsylvania, Unilogic, Ltd. and Lexeme Corporation.

16. I am an attorney admitted to practice in Pennsylvania and have been admitted to the Bar of the U.S. Patent and Trademark Office since 1981. I have not been asked to offer any opinions on patent law in this proceeding.

17. I am a named co-inventor on the following six issued patents relating to electronic commerce: U.S. Patent Nos. 7,330,839, 7,421,278, 7,747,465, 8,195,197, 8,280,773, and 9,456,299.

18. I have previously served as an expert in over 370 cases concerning computer technology. In particular, I have been involved in multiple cases involving Internet technology and delivery of content over the Internet. A current copy of my curriculum vitae setting forth details of my background and relevant experience, including a full list of my relevant publications and a listing of cases for which I have provided expert testimony is attached hereto as Exhibit A.

19. In performing my analysis I have relied upon the materials listed in Exhibit B.

II. SUMMARY OF OPINIONS

20. My opinions are set forth in the body of this Report and in the Exhibits that I have prepared and attached to this Report. Without intending to limit in any way the opinions expressed in this Report, following is a summary of my opinions.

21. The Asserted Claims are not invalid for any of the reasons asserted by Mr. Goodin.

22. The Asserted Claims are patent-eligible under 35 U.S.C. § 101.

23. The Asserted Claims are not invalid under 35 U.S.C. § 112.

24. The Asserted Claims are not invalid for obviousness in view of Malamud in combination with the knowledge of a POSITA.

25. The Asserted Claims are not invalid for obviousness in view of Nielsen in combination with Malamud.

26. The Asserted Claims are not invalid for obviousness in view of Pinard in combination with the knowledge of a POSITA.

27. The Asserted Claims are not invalid for obviousness in view of Liu in combination with the knowledge of a POSITA.

28. The Asserted Claims are not invalid for obviousness in view of the Adveractive Games in combination with the knowledge of a POSITA

29. Claim 35 of the '241 Patent is not anticipated by the Rosen '102 Patent.

III. OVERVIEW OF THE ASSERTED PATENTS

A. '102 Patent

30. The '102 Patent is entitled "Server System and Method for Modifying a Cursor Image." It was filed on June 25, 1997.

31. The '102 Patent relates generally to computer display cursors. More specifically, the invention discloses sending code from a server to a client to modify the appearance of a display cursor on the client.

32. The '102 Patent names James Samuel Rosen, Thomas A. Schmitter, and Mark S. Hall as the inventors. The records of the United States Patent and Trademark Office ("PTO") show that the patent was assigned to Plaintiff by an instrument executed on January 15, 2013 and recorded in the PTO on March 19, 2013.

33. The '102 Patent expired on June 25, 2017.

B. '449 Patent

34. The '449 Patent is entitled "Server System and Method for Modifying a Cursor Image." It was filed on September 21, 1999 as a continuation of the application that became the '102 Patent and was therefore effectively filed on June 25, 1997.

35. The '449 Patent shares the same specification as the '102 Patent, so it relates to the same field.

36. The '449 Patent also names James Samuel Rosen, Thomas A. Schmitter, and Mark S. Hall as the inventors. The records of the PTO show that the patent was assigned to Plaintiff by an instrument executed on January 15, 2013 and recorded in the PTO on March 19, 2013.

37. Because of a terminal disclaimer, the '449 Patent expired on the same day as the '102 Patent, that is, on June 25, 2017.

C. '241 Patent

38. The '241 Patent is entitled "System for Replacing a Cursor Image in Connection with Displaying the Contents of a Webpage." It was filed on January 21, 2005 and published on September 29, 2005.

39. The '241 Patent names James Samuel Rosen, Thomas A. Schmitter, and Mark S. Hall as the inventors. The records of the PTO show that the patent was assigned to Plaintiff by an instrument executed on January 15, 2013 and recorded in the PTO on March 19, 2013.

40. The '241 Patent issued on July 5, 2011. The '241 Patent term was extended by 1175 days. It expired on September 12, 2020. The Asserted Patents share the same specification (the "Common Specification").

41. I disagree with Mr. Goodin's opinion, expressed in his ¶ 56, that the Asserted

Patents have two different priority dates, one for the '102/'449 Patents and another for '241 Patent. I understand that there is a single priority date based upon the '241 Patent's application being a continuation application filed in an unbroken chain of pendency going back to the filing date of the '102 Patent's application with priority claimed back to that date when it was filed. I understand that Defendants challenge the priority date of the '241 Patent on legal grounds, on which I express no opinion other than the '241 Patent shares the same specification with the'102/'449 Patents, and a claim of priority appears in the prosecution history of the '241 Patent.

D. Brief Overview of the Common Specification[1]

42. The Asserted Patents in this consolidated litigation are: (1) U.S. Patent No. 5,994,102 (the '102 Patent), (2) U.S. Patent No. 6,118,449 (the '449 Patent), both of which are entitled "Server System and Method of Modifying a Cursor Image," and (3) U.S. Patent No. 7,975,241 (the '241 Patent), entitled "System for Replacing a Cursor Image In Connection with Displaying the Contents of a Webpage." All of the Asserted Patents share the Common Specification. The application for the '102 Patent was filed on June 25, 1997.

43. At the time of the invention, more and more companies were advertising on the Internet. '102 Patent, 1:21-23. Three typical forms of advertising at the time of the invention were "banner ads," 1:24-25, "frames," 1:55-56, and "self-appearing windows." 2:4-5. Each form of advertising had its drawbacks and limitations, as explained in the specification. 1:24-2:32. Consequently, the inventors recognized "a need for a simple means to deliver advertising elements . . . without the annoyance of totally interrupting and intrusive

[1] All column and line number citations are to the '102 Patent.

content delivery, and without the passiveness of ordinary banner and frame advertisements which can be easily ignored." 2:27-32. Thus, it was a specific objective of the inventions "to provide a server system for modifying a cursor image to a specific image displayed on a video monitor of a remote user's terminal for the purposes of providing on-screen advertising." 2:44-47.

44. The claimed inventions provide for server systems that enable a cursor or pointer displayed on a remote client's computer to change its appearance to a "specific image" that is representative of the content being displayed on that client computer. 4:4-12. The modified cursor image can be used by the provider of displayed web content to advertise or promote the displayed content. 3:51-4:3. As the Common Specification explains, "[t]he present invention provides a means for enabling cursors and pointers to change color, shape, appearance, make sounds, display animation, etc., when the user's terminal or computer, known as the 'client' or 'user' terminal, which has a network connection, receives certain instructions from a remote or 'server' computer attached to the network." 3:51-57.

45. The Common Specification describes "an exemplary embodiment of the present invention" whereby:

> [T]he generic cursor or pointer icons used in many networking applications, such as black arrows, hands with a pointing finger, spinning wheels, hourglasses, wristwatches, and others, will change appearance, and in some cases may incorporate sound or animation, in a way that is linked and related to the content, such as a web page, which is being transmitted to and displayed on the client computer.

'102 Patent, 3:57-64.

46. "The cursor or pointer image may also appear in a specified shape or color that is intended to convey a message that relates to the advertising content within the webpage being transmitted and displayed." 3:67-4:3. *See also* 7:2-5 ("the server system provides certain

information that causes the cursor image on the video monitor of the user terminal to display an image as specified by the server system.").

47. The invention relates to a graphical user interface in which a pointing device is used by the user to navigate a video display, and in which movement of the pointing device is indicated by a corresponding movement of a cursor on the video display. 8:24–37. The '102 Patent relates to changing that generic cursor by sending data and control signals from a remote computer to replace such a cursor with a cursor having an shape and appearance that is associated with other content being displayed to the user, e.g., a logo, mascot, or an image of a product or service, related to the other content being displayed to the user. 3:4–9, 17:5–18:3.

48. Figure 8 of the Common Specification, reproduced below, shows a web page according to the invention.

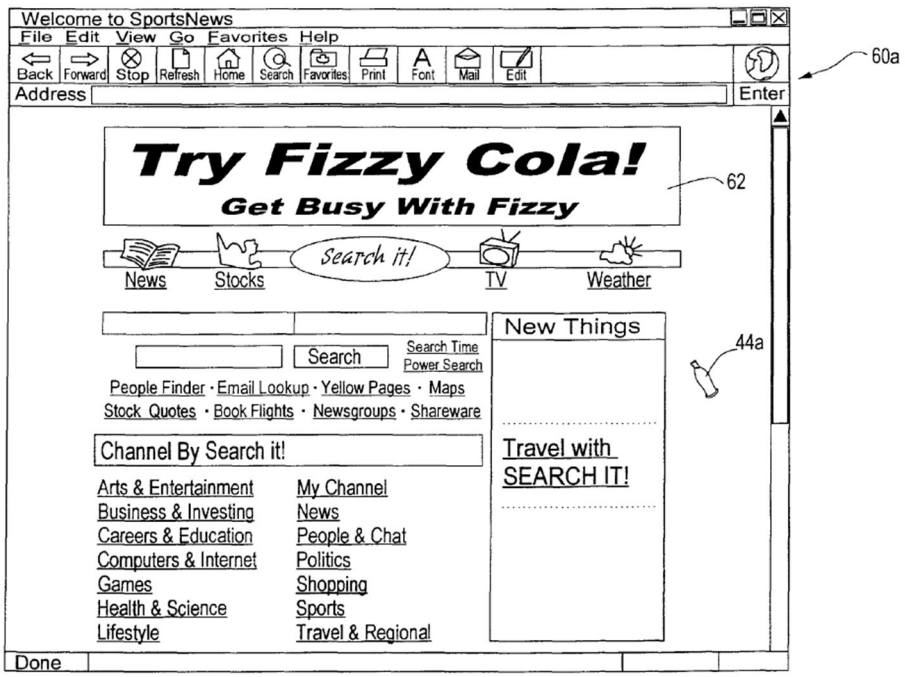


FIG. 8

49. In Figure 8, shown above, webpage 60a is displayed to a user, including banner ad 62 for cola. *Id.* at 13:31–37. The cursor on this webpage changes from a standard cursor (e.g.,

an arrow) to cola-bottle-shaped cursor 44a, which is associated with banner ad 62. *Id.* The '102 Patent describes interactions between a server system and a user's terminal to effect the cursor change. *Id.* at 4:4–9, 5:37–49, 5:48–65, 7:16–40. The user terminal is controlled by an operating system ("OS"), and application programs, such as a browser running on the user terminal, use an application programming interface ("API") to interface with the OS. *Id.* at 7:29-40, Fig. 2.

50. The server system transmits specified content information to the user terminal, including information to be displayed on the user's computer (such as a hypertext markup language ("HTML") webpage), cursor display instructions, and cursor display code. 8:4–23. The cursor display instructions indicate where the cursor image data corresponding to the new appearance of the cursor resides. 8:49–64. The cursor display code causes the user's terminal to display cursor image data in place of the original cursor, using the API of the operating system to effect these changes. 8:34–37, 8:52–57; 13:19–30.

51. As extensively described in the Common Specification, *e.g.* 7:41-14:64, when a browser requests a webpage from a server, it receives back an HTML file that includes content to displayed and/or pointers thereto, formatting instructions on how to display the content, and instructions and/or code specifying how the webpage is to interact with the user, including how the cursor modification takes place and specific images are displayed. The browser then uses the received information to generate the webpage displayed to the user, including the shape and appearance of the modified cursor image.

52. As the Common Specification also describes, the content of the specific image may be dynamically updated and may also change based upon cursor movement, according, e.g., to changes in its position or speed. 14:49-53 ("…it is possible to vary the modification to the

cursor as a function of cursor position. For example, the cursor pointer could be controlled such that it 'points' to a specific location on the screen regardless of the cursor's location on the screen as illustrated in line 214 of FIG 4."); 14:54-64 ("In accordance with another embodiment of the invention it is possible to vary the modification to the cursor as a function of cursor velocity. For example, the cursor image could change from a stationary bird to a bird with flapping wings only when the cursor is moved quickly across the screen as illustrated in line 215 of FIG. 4."); 17:17-21 ("A dynamic cursor image could then be used to show a person holding a straw in such a way that the straw always points from the user toward the top of the Fizzy bottle, no matter where the cursor moves on the screen."); 17:55-61 ("It may also be desirable in certain cases to put alphanumeric data in the cursor 'space' to convey information to users, such as stock prices, baseball game scores, the temperature in Florida, etc. The data can be static, semi-static (i.e. updated periodically), or dynamic (updated frequently -- possibly incorporating available streaming-data and data compression technologies.")

E. Benefits of the Patents

53. In this analysis, I focus specifically on the benefits of the 5,995,102, 6,118,449 and 7,975,241 patents to Internet retailers, not on their general benefits.

54. The Patents claim various systems and methods that address problems in online advertising, namely that banner ads are easily ignored (1:41-54), webpage frames cause cramping and reduced content space (1:55-2:3), and pop-up windows are easily obscured, closed or ignored (2:4-26). The patents solve these problems via objectives described at 2:37-3:50.

55. The inventors recognized that content associated with a cursor is not easily ignored because the cursor is a user's pointing device and the user's eyes tend to follow the cursor. A basic idea of the inventions is to change the appearance of the cursor based on the content it is

pointing to. 3:51-4:3. The change in appearance can alter the size, shape, color, text or image associated with the cursor.

56. Major outlets for Internet advertising are product webpages of Internet retailers, such as Defendants. An objective of a product page is to induce the viewer to buy the product. This was commonly done by providing color images of the product, textual descriptions, product specifications, and customer testimonials. Of these, images are the most captivating and effective because customers are reluctant to buy a product they have not been able to view.

57. It was known to allow a user to click on an image to view a magnified image of the product, then click again to restore the image to its original size. This is useful but somewhat clumsy, as it involves a lot of mouse clicking. The inventors provide this solution: mere movement of the mouse over a portion of page content results in an image associated with that content to be displayed along with the cursor as the cursor moves. 9:1-20. In this way, the user can move the cursor over an image of a product and view, for example, an expanded image of the relevant portion of the product as an associated image.

58. This cursor modification invention is very effective, as can be seen by the layperson viewing a Defendant's webpage.

59. Thus, the Asserted Patents disclose and enable systems and methods in which cursor images are dynamically modified for promotional and advertising purposes. In the '102 and '449 Patents, the specific shape and appearance of the modified cursor image corresponds to other content being displayed on the webpage to promote that content. In the '241 patent, the modified cursor image includes a dynamic visual image that tracks movement. The various examples disclosed in the Patents of promotional cursors include images that dynamically update with the cursors' movements, including associated images that are not integrated with

the modified cursor image but which also track a movement.

IV. LEGAL PRINCIPLES AND STANDARDS

60. I have been informed by counsel for Plaintiff that the following principles of law are applicable to this matter, and I have applied these principles in my analysis.

61. I understand that a patent may be granted for any "new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof…" 35 U.S.C. § 101.

62. I understand that the claims of an issued U.S. Patent are presumed to be valid and enforceable. I understand that this presumption applies despite Defendants' invalidity theories, including anticipation, obviousness and other assertions of invalidity.

63. I understand that the party challenging the validity of a claim of an issued United States patent bears the burden of proof by clear and convincing evidence to demonstrate that such claim is invalid.

64. I understand that a patent must contain a written description of the subject matter claimed in the patent. To satisfy the written description requirement, the patent must describe the invention with reasonable clarity to convey to those skilled in the art that the inventor was in possession of the invention as of the date the application was filed. The written description requirement is evaluated as of the date the application for the patent was filed.

65. I understand that, in order to anticipate an invention, a prior art reference must be enabling to one of ordinary skill in the art. I understand that to prove that a patent is invalid for lack of enablement, one must show that the patent does not contain a description of the claimed invention that, at the time the patent application was filed, would have enabled a person of ordinary skill in the art to make and use the invention without undue experimentation.

66. I understand that a patent is enabling if a person of ordinary skill in the field could make and use the invention without having to do excessive experimentation. In determining whether excessive experimentation is required, a number of factors can be considered: the scope of the claimed invention; the level of ordinary skill in the field; the amount of guidance presented in the patent; the amount of experimentation necessary; the time and cost of any necessary experimentation; how routine any necessary experimentation is; and whether the patent discloses specific working examples of the claimed invention.

67. I understand that an application for a patent may claim priority to an earlier filed application. 35 U.S.C. § 120. The effective priority date is important to determining whether or not a reference constitutes prior art. Art that comes after the priority date is not considered prior art for purposes of evaluating novelty or non-obviousness. 35 U.S.C. §§ 102, 103.

68. I have been advised that 35 U.S.C. § 101 defines patent-eligible subject matter to include "any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof."

69. I have been advised that, because the presumption of validity applies to patent eligibility, Defendant bears the burden of proving ineligibility by clear and convincing evidence.

70. I have been advised that, traditionally, courts have interpreted § 101 broadly to include "anything under the sun that is made by man." However, I have also been advised that the Supreme Court has narrowly recognized three specific exceptions to § 101's broad patent-eligibility principles: i.e., "laws of nature, physical phenomena, and abstract ideas."

71. I have been advised that, in *Alice Corp. Pty. Ltd. v. CLS Bank Int'l,* 34 S. Ct. 2347 (2014) and *Mayo Collaborative Services v. Prometheus Laboratories, Inc.* 132 S. Ct. 1289

(2012), the Supreme Court established a two-part test to determine whether a claim is patent-eligible. I understand that this test is referred to as the *"Alice* test."

72. I have been advised that, in Step One of the *Alice* test, the court must determine whether the claims are "directed to" a patent-ineligible concept - here, an "abstract idea." I have been advised that, if the Court determines that the claims are not "directed to" an abstract idea in Step One, the inquiry ends, and the claims are held to be patent-eligible.

73. I have been advised that, in determining whether the claims are "directed to" an abstract idea, the court must consider all the language of each claim, as properly construed. I have been advised that the abstract-idea's exception does not apply if the claimed invention "solves a technological problem in conventional industry practice," "improves an existing technological process," or "effect[s] an improvement in any other technology or technical field."

74. I have been advised that, according to a recent Federal Circuit case, the "relevant inquiry" under *Alice* Step One is "whether the claims focus on a specific means or method that improves the relevant technology or are instead directed to a result or effect that itself is the abstract idea." I have been advised that, if a claim recites a mere desired "result or effect," it may be ineligible as "abstract;" but, if it recites the "specific means or method" that achieves the result or effect, it is not abstract.

75. I have been advised that, if a claim is found to be "directed to" an abstract idea in Step One, the inquiry proceeds to Step Two. I have been advised that, in Step Two, courts conduct a search for an "inventive concept" - *i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to "significantly more" than a patent upon the ineligible concept itself. I have been advised that, in this step, the court must consider

all the elements of each claim, both individually and "as an ordered combination," to determine whether the claim restrictions transform the nature of the claim into a patent-eligible "application" of the abstract idea, rather than a mere recitation of the abstract idea itself.

76. I have been advised that Step Two of the *Alice* test is satisfied when the claim restrictions, alone or in combination, recite more than "well-understood, routine, conventional activities." I have been advised that whether a particular claim restriction, or combination of elements, represents "well-understood, routine, conventional activities" is a question of fact. I have been advised that Defendants bear the burden of proving that the claims recite "well-understood, routine, conventional activity" by clear and convincing evidence.

77. I understand that a prior art reference anticipates a claim only if it, and it alone, discloses each and every limitation of the claim (as properly construed) at issue. In other words, every limitation of a claim must identically appear in a single prior art reference, arranged as in the claim.

78. Section 102 defines what qualifies as prior art for the purposes of an anticipation analysis as well as a non-obviousness analysis under 35 U.S.C. § 103.

79. I understand that, to invalidate a claim, a reference must be prior art to the claim and that the defendant has the burden to prove that a reference meets the requirements to qualify as prior art.

80. I understand that, in order to be considered a "printed publication," a document must be generally available—that is, available to the public without restriction. I have been informed that the dissemination and public accessibility of a document are the keys to the legal determination whether or not that document was "published" and hence can serve as prior art to a patent.

81. I understand that a patent claim cannot be invalidated based on one person's testimony alone without corroborating evidence, particularly documentary evidence. Moreover, I understand that corroboration is required of any witness whose testimony alone is asserted to invalidate a patent claim, regardless of his or her level of interest in relation to that patent.

82. I understand that a claim is invalid if the claimed invention (pre-AIA) was known or used by others in the U.S. before the applicant's date of invention. I understand that a claim is invalid if the invention was patented or published anywhere, or was in public use, on sale, or offered for sale in this country, more than one year prior to the filing date of the patent application. I understand that a claim is invalid if the invention described by that claim was described in a U.S. patent granted on an application for a patent by another that was filed in the U.S. before the date of invention for that claim.

83. I understand that for a reference, other than a patent, to constitute prior art under § 102(a), the reference must have been published before the invention by the applicant for the patent. I understand that, for a system to constitute prior art under § 102(a), the system must have been known or used by others in the United States before the invention by the applicant for the patent.

84. I understand that prior use under § 102(a) must be of a complete product or process actually reduced to practice. An experiment that falls short of reduction to practice or is abandoned is not sufficient. I understand that the prior use must be accessible to the public. A use under conditions of secrecy is not sufficient. I understand that a prior use must be established by clear and convincing evidence and that oral testimony as to a prior use must normally be corroborated by other evidence.

85. I understand that prior knowledge under § 102(a) must consist of a complete and adequate description of the product or process that is available to the public. I understand that private or secret knowledge will not anticipate or constitute prior art.

86. I understand that, for a reference, other than a patent, to constitute prior art under § 102(b), the reference must have been published more than one year before the date of the application for the patent in the United States. I understand that, for a system to constitute prior art under § 102(b), the system must have been in public use or on sale in the United States more than one year prior to the date of the application for the patent in the United States.

87. I understand that public use under § 102(b) includes any use of the invention by a person other than the inventor who is under no limitation, restriction, or obligation of secrecy to the inventor. I understand that a secret use by persons other than the inventor does not constitute a statutory bar under § 102(b).

88. I understand that the inventor's own public disclosure of his invention more than one year prior to filing of the patent application can also invalidate his patent under § 102(b).

89. I understand that a claimed invention is unpatentable if the differences between the invention and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. 35 U.S.C. § 103.

90. I understand that the factual analysis relevant to obviousness requires that the following four inquiries be made: (1) the scope and content of the prior art are to be determined; (2) the differences between the prior art and the claims at issue are to be ascertained; (3) the level of ordinary skill in the art are resolved; and (4) objective indicia of obviousness or non-obviousness, which include "secondary considerations" such as the

commercial success of the invention, long felt but unsolved needs, unexpected results, and the failure of others to arrive at the invention, are to be considered. I understand that these four factors are sometimes referred to as the *Graham* factors.

91. I understand that mere identification in the prior art of each component of a claimed system does not show that the claim as a whole would have been obvious.

92. I understand that obviousness can be based on a combination of multiple prior art references. I also understand that a claim can be obvious in light of a single reference, without the need to combine references, if the elements of the claim that are not found explicitly or inherently in the single reference, if the missing limitation(s) can be supplied by the knowledge of one skilled in the art, including the common sense of one of skill in the art. I also understand that "hindsight reconstruction" cannot be used to combine references together to reach a conclusion of obviousness. However, where only a single reference is combined with the "common sense" knowledge of one skilled in the art, a reasoned analysis and evidentiary support is required as opposed to a bare assertion, as will be discussed below.

93. I understand that the Supreme Court addressed the obviousness standard in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007) in which the Court elaborated on the framework for analyzing obviousness it had set forth in previous cases. I understand that in *KSR*, the Supreme Court rejected the Federal Circuit's rigid application of the teaching, suggestion, or motivation ("TSM") test for obviousness, that is, some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention. Nevertheless, TSM remains as a rationale to support a conclusion of obviousness.

94. I understand that *KSR* recognized other rationales that may be used to justify the

conclusion of obviousness, in addition to the TSM test, including at least the following:

> (a) combining prior art elements according to known methods to yield predictable results (*KSR* at 1731);
> (b) simple substitution of one known element for another to obtain predictable results (*KSR* at 1731);
> (c) use of known techniques to improve similar devices (methods, or products) in the same way (*KSR* at 1731);
> (d) "obvious to try" in the narrow circumstances "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions" (*KSR* at 1742);
> (e) known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art (*KSR* at 1461); and
> (f) recourse to "common sense," provided that where there is an identifiable "reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" (*KSR* at 1741). As will be noted below, the bare assertion of "common sense" to modify a single reference is not enough. The Federal Circuit requires more than the bare assertion. *See, e.g., DSS Technology Management, Inc. v. Apple*, 885 F. 3d 1367, 1374 (Fed. Cir. 2018).

95. I understand that, if a single reference is missing a limitation but that limitation is allegedly being supplied by obviousness, particular care must be taken to avoid hindsight bias. Indeed, the Federal Circuit explained in this connection that there are additional showings that must be made other than simply an allegation of "common sense" to supply the missing limitation:

96. I understand that it is improper to combine references from non-analogous arts.

97. I understand that two criteria are relevant in determining whether prior art references are in analogous arts: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference is still reasonably pertinent to the particular

problem with which the inventor is involved.

98. I understand that, if the teachings of a prior art reference would lead one skilled in the art to make a modification that would render another prior art device inoperable, then such a modification would generally not be obvious. I understand that if a proposed modification would render the prior art device unsatisfactory for its intended purpose, then the proposed modification would generally not be obvious. I understand that if a combination would violate the principle of operation of one of the combined references, the combination is not motivated.

99. I understand that it is improper to combine references if the references teach away from their combination. I understand that a reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.

100. I understand that the degree of teaching away will depend on the particular facts. In general, a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant. I understand that a reference teaches away, for example, if (1) the combination would produce a seemingly inoperative device, or (2) the references leave the impression that the product would not have the property sought by the applicant.

101. I understand that one must consider whether or not there is objective evidence of non-obviousness, which is also referred to as "secondary considerations of non-obviousness." I understand that courts have considered the following secondary considerations in determining obviousness: (1) the invention's commercial success, (2) long felt but unresolved needs, (3) the failure of others, (4) skepticism by experts, (5) praise by others, (6) teaching

away by others, (7) recognition of a problem, (8) copying of the invention by competitors, (9) licensing or acquiescence, and (10) other relevant factors.

A. Claim Construction

102. In rendering my opinion, I have applied the constructions of claim terms agreed to by the parties and the constructions determined by the Court. (Dkt. 130, Claim Construction Order, dated 9/5/2023). For each other claim term, I have applied the plain and ordinary meaning of the term as would be understood by a person of ordinary skill in the art ("POSITA") at the time of the claimed invention, where appropriate, in light of the intrinsic evidence.

103. The agreed claim constructions are as follows:

Claim Term	Plaintiff's Proposed Claim Construction	Defendants' Proposed Claim Construction	Court's Construction
"corresponding to" as used in the phrase "cursor image data corresponding to a/said specific image" '102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53.	[**AGREED]**	[**AGREED]**	Plain and ordinary meaning. No construction required.
"cursor image data" '102 Patent, Claim 72; '449 Patent, Claims 1, 27, and 53.	[**AGREED]**	[**AGREED]**	Plain and ordinary meaning.
"**visual image**" '241 Patent, Claim 35.	[**AGREED]**	[**AGREED]**	Plain and ordinary meaning.

Claim Term	Plaintiff's Proposed Claim Construction	Defendants' Proposed Claim Construction	Court's Construction
"server" (computer or system) '102 Patent, Claim 72; '449 Patent, Claims 1, 27, and 53; '241 Patent, Claim 35.	[**AGREED]**	[**AGREED]**	Plain and ordinary meaning. No construction required.
"**said specific image includes/including content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal**" '102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53.	[**AGREED]**	[**AGREED]**	"an image representative of at least a portion of the subject or topic being displayed on the screen" *Lexos Media IP, LLC v. AP- MEX, Inc*., No. 216CV00747JRGRSP, 2017 WL 1021366, at *5–6 (E.D. Tex. Mar. 16, 2017).
"**specified content information**" '102 Patent, Claim 72; '449 Patent, Claims 1, 27, 38 and 53. "**content information**" '241 Patent, Claim 35.	[**AGREED]**	[**AGREED]**	The term "specified content information" / "content information" means "information provided to a user's terminal for use in the display, such as a web page."

104. The Court's claim constructions are as follows:

Claim Term	The Court's Construction
"cursor display code" ('102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53)	"computer code for modifying the display of the cursor image"
"cursor display instruction" ('102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53; '241 Patent, Claim 35)	"an instruction operable to modify the display of a cursor image"
"cursor image," "initial cursor image," "modified cursor image" ('102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53; '241 Patent, Claim 35)	"a movable image on a display screen whose position can be controlled through a user interface"
"modifying" / "transforming" [said cursor image/initial cursor image] (including "modify [said cursor image]" and "modifying [a cursor image]") ('102 Patent, Claim 72; '449 Patent, Claim 27, 53; '241 Patent, Claim 35)	Plain and ordinary meaning.
"specific image" ('102 Patent, Claim 72; '449 Patent, Claims 1, 27, 53)	Plain and ordinary meaning.
"tracks a movement" ('241 Patent, Claim 35)	Plain and ordinary meaning.
"promotional material" ('241 Patent, Claim 35)	Plain and ordinary meaning.

B. Definition of the "Person of Ordinary Skill in the Art"

105. The Patent Trial and Appeal Board ("PTAB"), in a related inter partes review ("IPR") proceeding, found that a person of ordinary skill in the art would have had "at least a

master's degree in Computer Science, Computer Engineering, or a related field, or hold a bachelor's degree in Computer Science, Computer Engineering, or equivalent and have at least two years of relevant work experience in the fields of UI [(user interface)] design and OSs." Exhibit C at 10. I understand that Plaintiff does not dispute this finding regarding a person of ordinary skill in the art.

C. Level of Ordinary Skill in the Art for the Patents

106. The '102 Patent defines its field of invention as follows:

> *This invention relates to computer networks and software, and more particularly, to a server system capable of modifying a cursor image displayed on a remote client computer.* '102 Patent, 1:5-7.

107. The'449 Patent shares the same specification as the '102 Patent.

108. The claims of the '449 Patent are drawn to systems and methods for modifying cursors by sending instructions from a server to a client computer to enable the appearance of the cursor to depend on the content of a webpage being viewed. This necessarily requires familiarity with web technologies and user interfaces. The claims of the '449 Patent are so similar to those of the '102 Patent that the PTO required Applicants to submit a terminal disclaimer.

109. The field of the '241 Patent, expressed at 1:8-10, is identical to that of the '102 Patent.

110. The '241 Patent shares the same specification as the '102 Patent. The claims are patentably distinct from the claims in the '102 Patent and the '449 Patent but are in the same field.

111. It is my opinion that a POSITA, as of July 25, 1997, in order to read and understand the '102 specification and to make and use the claimed inventions without undue experimentation, would have at least a bachelor's degree in computer science, computer

engineering, human factors engineering, or a related field and would have had at least two years of relevant work experience in the fields of UI design, or equivalent experience.

112. I believe the characterization of a POSITA accepted by the PTAB is a suitable one.

113. I disagree with Mr. Goodin's notion that a POSITA is not reasonably informed regarding what the claims cover, and certain the USPTO did not believe the claims to be indefinite when it issued them any more than the USPTO believed Claim 72 to be abstract when it issued that claim.

V. VALIDITY UNDER 35 U.S.C. § 101

114. The Asserted Claims, in my opinion, are patent-eligible under 35 U.S.C. § 101 because they are not directed to a patent-ineligible concept, such as an abstract idea. I am informed that the question whether an invention is directed to a patent-ineligible concept is a question of law and a negative answer to this question ends the § 101 inquiry. Furthermore, even if the Asserted Claims were directed to an abstract idea, those claims contain elements or steps which, when considered both individually and as an ordered combination, transform the nature of the claims into a patent-eligible application. In other words, these elements or steps, considered both individually and as an ordered combination, are sufficient to ensure that each of the patents, in practice, amounts to significantly more than a patent upon an ineligible concept itself.

115. As explained below, the Asserted Patents do far more than merely recite "the abstract idea of modifying a cursor image to an image related to the content being displayed on a user's terminal," as asserted at ¶ 70 of the Goodin Report. The Asserted Patents are directed to improvements in the field of online advertising, and provide technical solutions to problems being encountered in that burgeoning field at the time of their invention. To put

the innovation of the Asserted Patents into perspective, it is noteworthy that the application for the asserted '102 Patent was filed in June 1997, a mere few years after online advertisements emerged in the ecommerce marketplace. *See* https://en.wikipedia.org/wiki/Online_advertising.

116. Mr. Goodin's statement also misconstrues the claim limitations, which make clear that a very specific type of cursor modification is being claimed. There are claims in numerous other issued patents to various types of cursor modification systems and methods, and certainly claim 72 is no different in this regard concerning claiming patentable subject matter. I will not recite the claim language here, as my report already contains a limitation-by-limitation analysis of the claims with respect to Mr. Goodin's recited prior art and his analysis with regarding §§ 102 and 103. Concerning § 101, taking into account all of the claim limitations, I believe the Asserted Claims to be directed to patentable subject matter because they does not recite an abstract idea but rather are directed to systems and methods for making a very specific type of cursor modification.

117. At the time of the invention of the Asserted Patents, there were several drawbacks to then-prevalent forms of online advertising, namely that banner ads are easily ignored ('102 Patent, 1:41-54), web page frames cause cramping and reduced content space ('102 Patent, 1:55-2:3), and pop-up windows are easily obscured, closed or ignored (`102 Patent, 2:4-26). Thus, as the Asserted Patents emphasize, at the time of the invention, "[t]here is a need for a simple means to deliver advertising elements without the annoyance of totally interrupting and intrusive content delivery, and without the passiveness of ordinary banner and frame advertisements which can be easily ignored." ('102 Patent, 2:27-32).

118. The Asserted Patents provided a specific technical solution to improve online advertising technology and overcome the identified problems. The Common Specification pointed out that, while it was not new at the time for pointers and cursors to change shape, "[i]n conventional systems, the appearance of the cursor or pointer does not change to correspond with on-line content being displayed on the screen." (`102 Patent, 3:47-49). Thus, the claimed inventions provide for server systems that enable a cursor or pointer displayed on a remote client's computer to change appearance to a "specific image" that is related to the content being transmitted by the server and displayed on that client computer. ('102 Patent, 4:4-12). The modified cursor image can be used by the provider of displayed web content to advertise or promote the displayed content. ('102 Patent, 3:51-4:3). As the specification explains, "[t]he present invention provides a means for enabling cursors and pointers to change color, shape, appearance, make sounds, display animation, etc., when the user's terminal or computer, known as the 'client' or 'user' terminal, which has a network connection, receives certain instructions from a remote or 'server' computer attached to the network." (`102 Patent, 3:51-57).

119. The Asserted Claims recite how the invention improves on conventional methods of online advertising. The Asserted Patents disclosed "a server system for modifying a cursor image to a specific image displayed on a video monitor of a remote user's terminal for the purposes of providing on-screen advertising." ('102 Patent, 2: 45-47). The claims specifically recite how the invention works to provide improved online advertising technology. For example, a web browser retrieves a web page stored on a server, which page is then transmitted to and viewed by a user. ('102 Patent, 4:30-31). The retrieved web page contains a set of predetermined instructions referred to as

"cursor display instructions." ('102 Patent, 4:31-34). The browser interprets the information contained in cursor display instructions and instructs the operating system of the user's terminal to bring about the change in appearance of the cursor within the web page. As the Asserted Patents explain, "the server system provides certain information that causes the cursor image on the video monitor of the user terminal to display an image as specified by the server system. As a result, the server system remotely defines and manages the shape and appearance of the cursor image in accordance with a pre-specified condition." ('102 Patent, 7:1-5).

120. The Asserted Claims recited steps or elements that embody this specific process for implementing cursor modification and improving online advertising. The claims focus on a specific means and methods that improve online advertising technology, and are not directed to a desired result or an effect that itself merely employs generic processes and machinery.

121. For example, the Asserted Claims recite a method or system for receiving a request at a server to provide specified content information, such as a web page, to a user terminal. They also recite providing the specified content information to a user terminal in response to the request. This content information includes at least one cursor display instruction and at least one indication of cursor image data corresponding to what the `102 and '449 Patents describe as a "specific image," and what the `241 Patent describes as a "modified cursor image." These claims also recite transforming an initial cursor image displayed on said display of a user terminal into the shape and appearance of a specific image or modified cursor. The '102 and '449 Patents also require that the specific image include content corresponding or relating to a portion of the information that is to be displayed

on the display of a user's terminal, and the '241 Patent requires that the modified cursor image include a "visual image" that can track a movement of the modified cursor image.

122. Thus, the Asserted Claims claim a technological solution to the technological problems and drawbacks encountered in the prior art for creating effective online advertising –specific processes and systems for modifying the appearance of a cursor implemented on the display of a user's computer. The Asserted Claims are directed to a new and useful technique for performing online advertising. They are not directed to a law of nature, natural phenomena, business method or algorithm, or an automated way of achieving a result that was achieved before the advent of computers and the internet.

123. Additionally, I believe Mr. Goodin applies an incorrect standard in his analysis. The issue is not whether "Claim 72 recites components conventional to the skilled artisan at the priority date of the '102 and '449 Patents" (Goodin Rpt, ¶ 71), but rather whether the claim as a whole recites merely an abstract idea. It does not. Claim 72 effectuates a real world change in cursor images displayed on webpages based upon its specific requirements

124. I disagree with Mr. Goodin's statement that "[n]owhere in the Asserted Patents is there an improvement upon the functioning of a computer network or computer." Goodin Rpt. at ¶ 71. On the contrary, improvements to cursor modification technology are inherently part of the functioning of a computer. Additionally, the use of such cursor modifications, as disclosed in the Asserted Patents, facilitates the improved use and functioning of a computer via the display of information to a user. Through these cursor modifications, computers display information in an improved manner, as dictated by an advertiser, to facilitate user focus and understanding of what an advertiser wishes to show a user.

125. I similarly disagree with Mr. Goodin's statement that the "purported advance does

not improve the functioning of any computer network or computer, rather, it simply attempts to solve an economic or business problem," and note that the improvement to the functioning of the computer just so happens to be applicable to a business problem (*i.e.*, problems in online advertising). Goodin Rpt. at ¶ 71. In fact, Mr. Goodin never identifies any purported "economic or business problem" he alleges the Asserted Claims merely solve.

126. I also disagree with Mr. Goodin's premise that the hardware and software components in claim 72 are used to perform "routine and conventional functions." (Goodin Rpt., ¶ 73) because the recited limitations in the claim are not conventional, as I extensively discuss in addressing Mr. Goodin's analysis regarding §§ 102 and 103.

VI. VALIDITY UNDER 35 U.S.C. § 112

A. 35 U.S.C. § 112, ¶ 2 – Definiteness Overview

127. I understand that definiteness is a statutory requirement for patentability. Under 35 U.S.C. § 112, ¶ 2, a patent's specification must "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." A claim is indefinite only if, when "read in light of the specification" and "prosecution history," it "fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). As a starting point, I note that patents are presumed valid and a party contending that a claim of a patent is invalid as indefinite must overcome this presumption by clear and convincing evidence. *See Microsoft Corp. v. i4i Ltd. P'ship,* 564 U.S. 91 (2011).

128. I disagree with Mr. Goodin's notion that a POSITA is not reasonably informed regarding what the claims cover, and certain the USPTO did not believe the claims to be indefinite when it issued them any more than the USPTO believed claim 72 to be abstract when

it issued that claim.

B. "corresponding to"

129. Mr. Goodin states that "specific image […] corresponding to at least a portion of said information"/"specific image relates to at least a portion of said information" is indefinite. Goodin Rpt. at ¶ 78. He states that this is because: "[t]he specification does not provide sufficient guidance regarding the scope of this term and what 'corresponding to' or 'relates to' mean in the context of the claim." *Id*. I disagree with this analysis.

130. I have been informed that the parties have agreed that the claim term "corresponding to" does not require construction, and should be given its plain and ordinary meaning. See Exhibit D at 22, the Parties' P.R. 4-5(d) Joint Claim Construction Chart (Ex. A to Dkt. 103). In this connection, I also have been informed that "general principles of claim construction apply" to the question of indefiniteness. *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1377 (Fed. Cir. 2015) (internal quotation marks omitted). Thus, the parties' agreed claim construction confirms that the claims containing the term "corresponding to" (and "related to") inform those skilled in the art with reasonable certainty of the scope of the invention, and that the term means "representative of."

131. I also have been informed that the parties have agreed to the construction of the following phrase which also includes the term "corresponding to": "said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal. . . .' The parties have agreed that the term "corresponding to," as used in this phrase, means "representative of." See Exhibit D at 35. This also confirms that the claims containing the term "corresponding to" (and "related to") informs those skilled in the art with reasonable certainty about the scope of the invention, and

that the term means "representative of."

132. Additionally, the specification provides sufficient guidance regarding the scope of this term. *See e.g.,* '102 Patent, 3:4-14 (". . . that the cursor or pointer's appearance **is associated with** a portion of, or the entire content being displayed on the user's screen.").

133. I disagree with Mr. Goodin's notion in his ¶ 78 that "it would be left to the subjective judgement of a [POSITA] to determine what portion of the information being displayed on the user's terminal is used to generate 'said specific image.'" This is incorrect. The claim specifies that the portion of the information to be displayed to which the specific image includes corresponding content is the portion of the information to be displayed over which the initial cursor image was moved to trigger the content modification. Also, the requirement that the specific image include content "corresponding to" the triggering content to be displayed is precise enough to a POSITA as the subject matter permits given the claim is intended to cover the designed for use that the developer is implementing the system to accomplish.

C. "information to be displayed"

134. Mr. Goodin states that "information that is to be displayed on said display of said user's terminal" is indefinite. Goodin Rpt. at ¶ 79. He states this because "[t]he specification provides no guidance as to what constitutes 'information to be displayed' or how it differs from the information already displayed on the user's terminal." *Id*. I disagree, and note that I have been informed that the term "information to be displayed" is part of an agreed construction in this litigation. Specifically, the parties have agreed that the term means "the subject or topic being displayed on the screen." See Exhibit D at 35. *Id*. The Defendants confirmed this understanding of the term "information to be displayed" in their claim construction brief

regarding the term "specific image," and the Court reaffirmed this agreed construction in its discussion of this term in its Claim Construction Order. See Dkt. 130 at 15-18.

135. Additionally, the specification provides sufficient guidance regarding the scope of this term. *See*, *e.g.,* '102 Patent, 2:58-62; 3:4-10; 3:48-50; 3:62- 4:3; 7:7-9. This teaching of the specification and the clear claim language informs, with reasonable certainty, those skilled in the art that "information that is to be displayed" is the information included in the "specified content information" provided to the user's terminal for subsequent display on the user's terminal.

136. I disagree with Mr. Goodin's contention that "the specification provides no guidance as to what constitutes "information to be displayed or how it differs from the information already displayed on the user's terminal." Goodin Rpt. at ¶ 79.

137. The claim is clear that the "information to be displayed" is sent from the server as one component of the "specified content information" so that is how it differs from what may already be on the screen of the user's terminal at the time that the request for the specified content information was made. The specification describes extensively that the request for the specified content information is a web page request and the information to be displayed is the display content of the web page returned from the sever.

D. "responsive to movement"

138. Mr. Goodin states that "responsive to movement"/"in response to movement" [of said cursor image] is indefinite. Goodin Rpt. at ¶ 80. He says this is because "[t]he specification provides no guidance so to the type of movement that would trigger cursor modification or what element identifies the triggering movement." *Id*. I disagree. Mr. Goodin does not explain why "guidance" regarding the "type" of movement that would "trigger cursor

modification" was necessary "to inform, with reasonable certainty, those skilled in the art about the scope of the invention." Any "type" of movement, so long as it also follows the remainder of the claim limitations, is sufficient to meet the "responsive to movement" limitation within the asserted claims. Additionally, the "element [that] identifies the triggering movement" is not a limitation found in the Asserted Claims.

139. In addition, Mr. Goodin ignores the remainder of the clause containing the term "responsive to movement," which does provide further "guidance" regarding the scope the claim term. That additional language disregarded by Mr. Goodin states that the modification of the cursor image is "in response to movement of said cursor image **over a display** . . . ." Goodin Rpt. at ¶ 80. This additional claim language further serves to further clarify the scope of the claim so as to refute any asserted indefiniteness of the claim language.

140. I also disagree that a POSITA would not understand "responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal" because there is "the specification provides no guidance so [sic: as] to the type of movement that would trigger cursor modification or what element identifies the triggering movement. Goodin Rpt. at ¶ 80.

141. First, there is no recited element that identifies the triggering movement and I do understand an unclaimed limitation to be a proper part of an indefiniteness analysis. Second, the claim is quite clear that the movement that triggers the content modification is movement over a portion of the information to be displayed (e.g., a portion of webpage content sent from the server for display) *to which the specific image corresponds.*

E. "the visual image tracks a movement of the modified cursor image"

142. Mr. Goodin states that the phase, "the visual image tracks a movement of the

modified cursor image" is indefinite. Goodin Rpt. at ¶ 81. He says this is because "it recites that the 'visual image tracks a movement of the modified cursor image,' but the claim previously recites that the 'visual image' is included in the 'cursor image,'" thus rendering the above limitation "completely superfluous." *Id*. I disagree with this statement.

143. First, I have been informed that the Court has construed the claim term "tracks a movement" to have its plain and ordinary meaning. Dkt. 130 at 18-19, 23. Furthermore, the fact that claim 35 of the '241 Patent "recites that the 'visual image tracks a movement of the modified cursor image,' but the claim previously recites that the 'visual image' is included in the 'cursor image,'" does not render the latter term "completely superfluous." Mr. Goodin does not explain why this is so. The fact that one image "tracks a movement" of another image does not necessarily mean that the first image is "included" in the second image, and does not render the second phrase "completely superfluous" in view of the first. Again, Mr. Gooden does not explain why this would be so. To the contrary, the Court found that "movement of the visual image in a direction opposite movement of the modified cursor [] cannot be fairly characterized as 'tracking.'" Dkt. 130 at 19. The Court also found that it "agrees that the plain meaning of 'tracks a movement' does not require either a 'one-for-one relationship" or 'specific positional relationship' of the visual image relative to the modified cursor.'" *Id*. The Court also observed that the defendants "generally agree" with this point. *Id*. This confirms that the "tracks a movement" requirement does not render the previous "included in" requirement "completely superfluous." The Court also found that the term "the visual image tracks a movement of the modified cursor image" has an "ordinary meaning." *Id*. Additionally, the specification provides sufficient guidance regarding the scope of this phrase. *See*, *e.g.,* '102 Patent, 16:14-20.

144. Mr. Goodin seems to be interpreting the word "include" in this claim to mean some component that is a fixed part of the cursor image, which might render it superfluous. However, his interpretation violates fundamental claim construction principles, the prosecution history and the specification which all make clear modifying the cursor image to include a visual image that tracks its movement is not met by an image comprising a fixed part of the modified cursor image --as I further discuss herein. I understand that a construction that would render a claim invalid is rarely correct.

F. "promotional material"

145. Mr. Goodin states that the term "the visual image includes promotional material" used in claim 35 of the '241 Patent is indefinite because the "specification provides no guidance as to what constitutes 'promotional material' or how it differs from the information already displayed on the user's terminal." Goodin Rpt. at ¶ 82. I disagree with this statement.

146. To begin with, I have been informed that the parties have agreed that the term "promotional material" should be given its plain and ordinary meaning. See Exhibit D at 20. *See also* Claim Construction Order, Dkt. 130 at 20. The plain and ordinary meaning of "promotional material" means material that promotes the sale of a product or service. It "differs" from other information "already displayed on the user's terminal" by promoting the sale of such a product or service.

147. Mr. Goodin also states that this term is indefinite "because the limitation falls within the printed matter doctrine, and the claimed informational content (promotional material) does not have a functional or structural relation to the substrate on which it is printed." Goodin Rpt. at ¶ 82. I also disagree with this statement. I am informed that the "printed matter doctrine" does not have anything to do with the written description/definiteness

requirement of 35 U.S.C. § 112, ¶ 2. Mr. Goodwin does not provide any explanation regarding why, if "promotional material" is regarded as subject to the printed matter doctrine, that would render the term indefinite.

148. Additionally, I disagree with Mr. Goodin's opinion regarding "promotional material" because the term is sufficiently precise to reasonably apprise a POSITA of the scope of the term.

G. "a system for modifying a cursor image […]"

149. Mr. Goodwin states that "Claim 35 of the '241 Patent is indefinite because it is unclear whether infringement occurs when one creates a system for modifying a cursor image in accordance with the claim, or whether infringement occurs when the client computer actually "receive[s]," "process[es]," "modifi[es]," "display[s]" and the visual image actually "modifie[s]" and "track[s]" as set forth in the claim. Goodin Rpt. at ¶ 83. I disagree with this statement because claim 35 clearly claims a "system" and does not also claim coverage of steps for performing a method.

150. Specifically, claim 35 does not purport to cover both a system and a particular use of the system. Instead, the claim recites actions that the system is capable of taking -- i.e., its functionality. The claim requires the capability of the system to be used in a particular manner, but not actual use. The claim recites a system comprising a set of components and the way in which the components are configured. The claim language in dispute recites the structure of the claimed system rather than the act of using the system. The claim language is directed to system capabilities rather than user actions.

H. Enablement

151. Mr. Goodwin states the following regarding the enablement requirement:

> To the extent Lexos argues that a semi-transparent cursor which permits display through said cursor of page content underneath the position of the cursor can constitute the claimed "modified cursor image … in the shape and appearance of [a] specific image" which "relates to at least a portion of the information to be displayed on said display," or similarly constitutes the claimed modified cursor upon "transforming [an] initial cursor … into the shape and appearance of [a] specific image," which "includes content corresponding to at least a portion of [the] information that is to be displayed on [the] display of [the] user's terminal," then it is my opinion that the '102 and '449 Patents fail to provide sufficient written description or an enabling disclosure. The specifications of the '102 and '449 Patents lack any written description to inform a person of ordinary skill in the art as to generating a semi-transparent cursor. Additionally, because the specifications provide no guidance on generating a semi-transparent cursor, these claims are invalid for lacking enablement.

Goodin Rpt. at ¶ 86.

152. This statement fails to explain how the scope of the asserted claims are not enabled. I am informed that the statutory requirement of enablement is limited to what is claimed. Section 112 requires enablement of "only the claimed invention," not matter outside the claims. In addition, I am also informed that a patent's specification need not describe how to make and use every possible variant of the claimed invention.

153. The asserted claims do not claim a "semi-transparent cursor" as a "specific image" or "modified cursor image," or even a component of such an item. Thus, the asserted claims do not need to enable such specific subject matter. The specification of the '102 Patent does enable the claimed invention as set forth in the asserted claims. In addition, Mr. Goodwin acknowledges that "a patent specification does not need to explain that which is already known and available to a skilled artisan." Goodin Rpt. at ¶ 85. How to create a semi-transparent overlay was known to a person of ordinary skill in the art as of the effective filing date of the `102 Patent. See https://www.nngroup.com/articles/ideas-for-improved-within-page-navigation/.

154. Mr. Goodwin further states that:

> Additionally, claim 72 of the '102 Patent and claims 1, 38, and 53 of the `449 Patents include the terms "specific image including content corresponding to" / "specific image relates to." In my opinion, the '102 and '449 Patents fail to provide sufficient written description or an enabling disclosure with respect to the above claim terms (and any other similar terms in any of the Asserted Claims). For example, because "said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal" and "said specific image relates to at least a portion of said information to be displayed on said display of said remote user's terminal" both appear in claim 1 and in claim 27 of the '449 Patent, the meaning of one claim term necessarily differs from the other. But the specifications of the '102 and '449 Patents lack any written description to inform a person of ordinary skill in the art as to the difference. Additionally, because the specifications of the '102 and '449 Patents provides no guidance on the difference between these two claim terms and a POSITA would have to undergo undue experimentation to practice the full scope of the alleged invention. As such, these claims are invalid for lacking enablement.

Goodin Rpt. at ¶ 87.

155. Mr. Goodwin does not explain why the presence of the terms "corresponding to" and "relates to," as used in the Asserted Claims he refers to in the paragraph above, necessarily means that that "the meaning of one claim term necessarily differs from the other." *Id*. The parties did not contend that the meaning of these claim terms differed in any material respect. Mr. Goodwin does not explain why the lack of a disclosure in the specification regarding any such difference in the meaning of the two terms would matter to satisfying the enablement requirement. The enablement of the Asserted Claims does not depend on the presence or absence of such a disclosure in the specification of the '102 Patent. Mr. Goodwin also does not explain what "undue experimentation" a person of ordinary skill in the art would need perform in order to "practice the full scope of the alleged invention."

156. Mr. Goodwin also states that:

> Claim 35 of the '241 Patent recites "modifying" cursor "to include the visual image" which "includes promotional material." In my opinion, the claims, when read in light of

> the specification, fails to enable and inform a POSITA that the inventors possessed an invention that "modif[ies]" a cursor "to include the visual image" which "includes promotional material." To the extent Lexos argues that a semi-transparent cursor, which permits display through said cursor of page content underneath the position of the cursor, can constitute the claimed "modif[ied] cursor image," which "includes promotional material," then the '241 Patent fails to provide sufficient written description or an enabling disclosure.

Goodin Rpt. at ¶ 88.

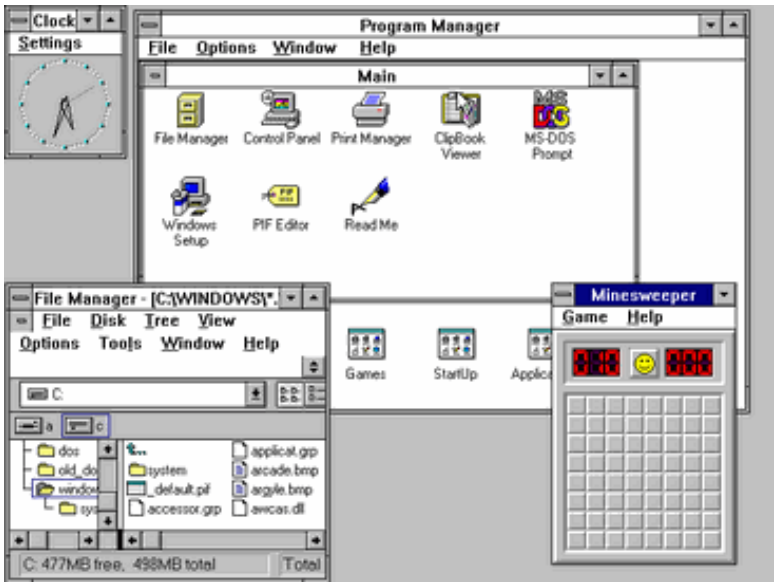
157. I disagree with this statement. Mr. Goodwin does not provide any basis for his bare conclusion that the '102 Patent specification "fails to enable and inform a POSITA that the inventors possessed an invention that "modif[ies]" a cursor "to include the visual image" which "includes promotional material." The discussion in this rebuttal report demonstrates that the specification for the '102 Patent does show this. Mr. Goodwin's repeated reliance on the lack of an enabling disclosure of a "semi-transparent cursor" is deficient for the reasons stated above.

158. In ¶ 89 of his report, Mr. Goodin essentially provides a re-hash of his prior opinions regarding a lack of enablement. I continue to disagree with these statements for the reasons discussed above. The parties have agreed that the term "promotional material" should be given its plain and ordinary meaning. The specification need not contain a definition of this term to enable a person of ordinary skill in the art to practice the full scope of Claim 35 of the '241 Patent. Mr. Goodin again complains that the "'241 Patent specification lacks any written description to inform a person of ordinary skill in the art as "to generating a semi-transparent cursor." I have previously explained why this lack of enablement argument is without merit.

VII. NON-OBVIOUSNESS OF THE ASSERTED CLAIMS IN VIEW OF MALAMUD IN COMBINATION WITH THE KNOWLEDGE OF A POSITA

159. I disagree with Mr. Goodin's conclusions in his report regarding obviousness over Malamud, for at least the reasons set forth below.

160. At the outset, Malamud has been evaluated by the Patent Trial and Appeal Board ("PTAB") previously in an inter partes review, and the PTAB found that Asserted Claim 72 of the '102 Patent, and Asserted Claims 1, 38, and 53 of the '449 Patent were not obvious in view of Malamud, even in combination with Anthias, another reference. In particular, the PTAB did not find any evidence that Malamud transmitted the objects over which cursor could later be moved and modified. *See e.g.,* IPR2018-01749, Paper 21 ("Final Written Decision"), pp. 23-26. It follows that if the references claims were not obvious over Malamud + Anthias, they would not be invalid over Malamud alone. Malamud teaches a Microsoft Windows application that works with the Windows 3.1 operating system. Windows 3.1 provided a then-familiar form of user interface having a "desktop" on which icons representing "named entities" can be displayed:



https://upload.wikimedia.org/wikipedia/en/7/73/Windows_3.11_workspace.png

161. As shown in the above screen shot, some of the named entities are "file manager," "control panel," "print manager," *etc.* As shown in the screenshot below, the operating system allowed the user to assign an icon to a named entity by selecting the "Change Icon" button.

http://toastytech.com/guis/win31.html



162. As Malamud explains, the application is to be used with an operating system, such as "an embellished version of the Microsoft WINDOWS, version 3.1, operation system that supports the use of information cursors." Malamud at 4:35-38. This embellished operating system displays various types of information cursors such as the name cursor 26 of FIGS. 2a, 2b, 2c, the preview cursor 34 of FIG. 3, or and the combined name and preview cursor 38 of FIG. 4, or a property cursor 40 of FIG. 5. These supported information cursor types each contain a pointing portion 28 and a second portion which is a box containing information about a named entity such as its name in box 30, an image in preview box 36 or text in a property box 42.

163. While Malamud does not explicitly describe that the embellished operating system is the source of the cursor display code that creates these boxes, a POSITA would understand

"supports the use of information cursors" to mean that this code is provided in the embellished operating system, particularly in light of fact that Malamud nowhere else describes the source of the cursor display code for such boxes, and nowhere states the Malamud application to be the source of any such cursor display code. Rather, as Malamud describes: "Information cursors are made available by an operating system to applications that are run on the operating system." Malamud at 3:6-9.

164. This understanding is further reinforced by Malamud's description that the messages from the application to the operating system are contain only the type of information cursor to be displayed, whether its boxes should always be displayed or only displayed when the cursor is positioned over the associated named entity, and the content to be displayed in the box(es) of the selected information cursor type:

> FIG. 7 is a flowchart showing in more detail the steps that must be performed in order to realize step 56 of FIG. 6. After the window procedure has determined what is at the specified cursor position, the procedure passes a message to the operating system 22 (FIG. 1) that tells the operating system what type of cursor to display and sets forth the contents and type of information to be displayed in the cursor (step 58 in FIG. 7). Suppose that the application program desires to display a name cursor 26 (FIG. 2a). A message requesting that a name cursor be displayed is passed to the operating system 22 along with a text string for the name to be displayed in the name box 30. However, if the cursor to be displayed is a preview cursor 34 (FIG. 3), a message specifying that a preview cursor is required is sent. The message includes a pointer to a bitmap of graphical information that the operating System 22 should use in the preview portion 36. Still further, a property cursor 46 may be requested in the message. The message, in Such a case, includes a text string for the text of property information to be displayed in the property box 42.

Malamud at 4:45-65.

165. Malamud does not explicitly describe how this information is input into the Malamud application for it to pass to the operating system, but a POSITA would understand

that the information regarding the type of cursor to display and box content must be specified by a user in some manner, most likely through a direct user input to the Malamud application to allow the user to determine what type of entity to display and what content to display for the named entities on their computer system. A POSITA would not, however, understand that the Malamud application comes pre-loaded with the information cursor content, because it could not know what files are on the user's computer prior to installation. This understanding is reinforced by Malamud's description of an exemplary named entity: a text file for a book about chess represented by a book icon 32 in which a preview cursor shows a graphic involving chess pieces. *See* Malamud, FIG.4 and 3:35-38 and 3:59-4:3.

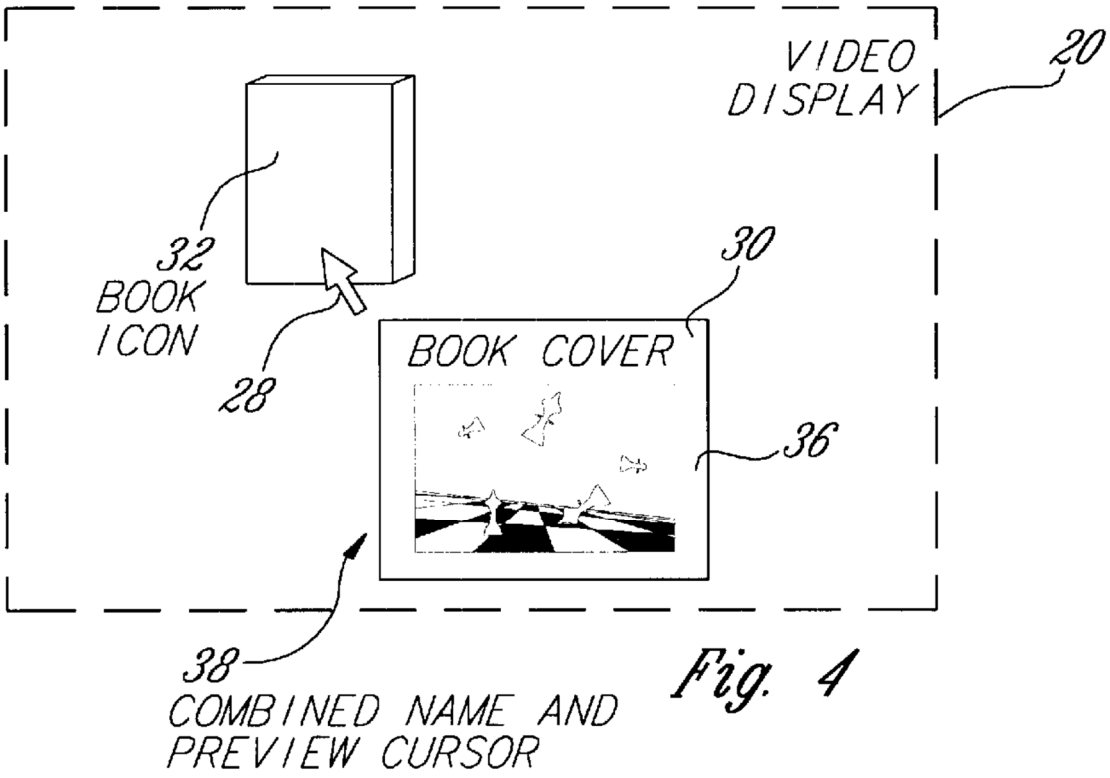


Fig. 4

166. A POSITA would understand from this description that the Malamud application does not come pre-shipped with knowledge that the computer it will be installed upon has

stored on it a chess book but rather that the content of the information to be displayed is entered into the application by a user after its installation.

167. Finally, nowhere does Malamud describe the source of the book icon or that the application sends the icon to the operating system. Rather, Malamud reinforces what a POSITA would understand, that the icon for the named entity is provided not by Malamud's application but from the operating system itself, which allows a user to specify icons for a given named entity.

168. As previously discussed, Malamud describes a Windows application that works with an operating system, such as Windows 3.1, that has been "enhanced" to support the use of information cursors.

169. A user installs and configures Malamud's application to, at a minimum, add the content to be displayed in the box(es) of an information cursor (*i.e*, specific image) and to specify which information cursor type is to be displayed when a cursor is positioned over the Windows icon for a given named object/entity (cursor display instructions). There is no disclosure in Malamud of also transmitting the related content to be displayed from a server in response to a request, as required by all Asserted Claims.

170. In my opinion, Malamud does not disclose the source of the icons, but a POSITA would understand that they are provided by the "embellished" operating system, as there is no disclosure of any transmission of icons by the Malamud application.

171. Malamud does not disclose that the application it describes comes pre-configured with any named entities, nor would such make sense because, like the book on chess of Malamud's example, named entities are screen objects obtained from files that a user has created or saved on their computer. In a Windows system, those files can be represented by

icons that are displayed by Windows on a user's screen. Malamud's application can then be used to enter content to be displayed in the information cursor so that this additional information about the named entity can be displayed in the box(es) of the information cursor. There is no disclosure in Malamud that the application is used to create named entities or their icons or sends any content to be displayed corresponding to the specific image.

A. Limitation 72[a]: receiving a request at said at least one server to provide specified content information to said user terminal;

172. Mr. Goodin does not contend that Malamud teaches this limitation, and instead relies on the knowledge of a POSITA, stating, "but it was well-known to a POSITA by June of 1997 that a user could request to download an application program from a server and a POSITA would also have been motivated to download application programs, such as the one described in Malamud, from a server…" Goodin Rpt. at ¶ 140. I disagree with this statement.

173. As an initial matter, Malamud describes a Windows application that works with an operating system, such as Windows 3.1, that has been "enhanced" to support the use of information cursors. A user installs and configures Malamud's application to, at a minimum, add the content to be displayed in the box(es) of an information cursor (*i.e*, a specific image) and to specify which information cursor type is to be displayed when a cursor is positioned over the Windows icon for a given named object/entity (cursor display instructions). There is no disclosure in Malamud of also transmitting the related content to be displayed from a server in response to a request, as required by claim 72. Mr. Goodin does not suggest otherwise.

174. Furthermore, Malamud makes it clear that "[i]nformation cursors are made available by an operating system to applications that are run on the operating system." Malamud at 3:6-8. Malamud further describes the invocation of information cursors by sending a message to the operation system telling it what cursor needs to be displayed.

Malamud at 5:14-65. The icons in Malamud are provided by an "embellished" operating system. There is no disclosure that they are provided by Malamud's application.

175. Simply downloading Malamud's application from a server would not satisfy this requirement because it would not result in a request for the "specified content information" that is required by the claim. For example, the application itself would not know what files are on the user terminal and what content to display in the information cursor. A user needs to input that information into Malamud as well as choose the type of information cursor it wants the operating system to display.

B. Limitation 72[b]: providing said specified content information to said user terminal in response to said request, said specified content information including at least one cursor display instruction and at least one indication of cursor image data corresponding to a specific image, and

176. Mr. Goodin does not assert this limitation is disclosed in Malamud. Rather, he asserts, "it would have been obvious in view of Malamud for a user to request from a server, and receive from the server in response, an application program, and that application program comprises 'specified content information' because the program includes instructions and information regarding the display of elements depicted by the application program, including the objects that the application programs will display and to which the cursor can point, as well as information regarding the modified cursors (i.e., information cursors) for each entity displayed in the application window…" Goodin Rpt. at ¶ 142.

177. This deficiency is not remedied by simply downloading the Malamud application from a server. Moreover, there would be no motivation for a POSITA to modify Malamud from a Windows application to an on-line application that provides the user annotated content within the cursor boxes because then the user of user terminal would have to provide the proposed on-line version of Malamud at the server access to the files on its client computer in

order for it to operate and it would still not know which files to associate with which type of information cursor, much less what content to display within that information cursor. Consequently, there is simply no analog in Malamud to making an HTTP request for a webpage and receiving back from the server all the specified content information required by the claim to implement the cursor modification having the shape and appearance of a specific image that corresponds to content to be displayed and is triggered by moving the initial cursor information over that information to be displayed. Indeed, the file icons Malamud discloses come from the operating system, not from any server, or even an application program.

C. 72[c] transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction,

178. Here, again, the cursor display instructions Mr. Gooding posits to be present in Malamud would specify the type of information cursor to be displayed and the specific image of the modified cursor. But the user must enter such information in Malamud, so this element is not present in the downloaded Malamud that Mr. Goodin discusses.

D. 72[d] wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal, and 72[e] wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal.

179. Here again, Mr. Goodin acknowledges that these claim limitation, which I address together, are not present in Malamud but he says would be disclosed or suggested in combination with the knowledge of a POSITA. I disagree.

180. First, these claim limitations together require that the cursor modification be in

response to movement of the initial cursor image the portion of the information to be displayed, the information to be displayed being part of the specified content information sent from the server, that the specific image that comprises the shape and appearance of the specific image include content that corresponds to portion of the information to be displayed and that the cursor modification be triggered in response to moving the initial cursor image over *that* portion of the information to be displayed.

181. Mr. Goodwin necessarily relies on the Windows icon for the file as being the cursor modification triggering content. But that file icon comes from the operating system, not from the Malamud application.

182. Moreover, Mr. Goodin's proposed modification of Malamud is not suggested to a POSITA by the Malamud disclosure. First, merely downloading a copy of Malamud from a server does not meet the claim. Second, there would be no need for such an on-line version to send the Windows icons down to the user terminal, since those icons would already exist in the operating system at the user terminal for the files stored there. Therefore, there is no motivation to modify Malamud to provide icons that are already present. Third, such a modification would be unworkable because it would require Malamud to have access to the user terminal's files and display content. Fourth, such an online version would still not include the content displayed within the information cursors or what type of information cursors display.

183. For the same reasons, Malamud does not render obvious claims 1, 27 and 53 of the '449 Patent because these claims involve substantially the same requirements as claim 72 of the '102 Patent and the same reasoning I have already discussed applies to these claims as well.

184. Claim 35 of the '241 Patent is also not rendered obvious by Malamud but different

reasoning applies because this claim involves very different substantive requirements, including a dynamic requirement not present in the Asserted Claims of the '102 and '449 Patents via the "tracks a movement" requirement, as I will further discuss.

E. Limitation 35[a]: at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image

185. Malamud does not suggest an online version of it for the reasons I have previously discussed. I also disagree with Mr. Goodin's statement that "Malamud's application program comprises 'specified content information' because it includes information that is displayed on a user's computer because it generates the content displayed in the application window. Examples would be the book icon 32 pointed to by the cursor and the preview cursor image." (Goodin, ¶ 497). Malamud nowhere discloses that it sends information to the operating system to generate the Windows icons. Rather, Malamud discloses that it works with an enhanced version of Windows that supports information cursors and which already maintains icons for named entities

186. Moreover, while Malamud does send information to the operating system to specify which type of information cursor to display and the content to be displayed within the information cursor, a POSITA would understand that a user of the Malamud application would have to enter this information. Therefore, I do not agree that an on-line version of Malamud would contain this information. Nor do I agree that a POSITA would have been motivated to make an on-line version that could send such a message because that would require access to file directories and icon information at the client computer that a user would not necessarily want to provide in order to operate in the manner that Mr. Goodin posits. Therefore, Malamud does not render limitation 35[a] obvious.

F. Limitation 35[b]: following the receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image

187. I will discuss limitation 35[b] in connection with limitation 35[c].

G. Limitation 35[c]: wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image

188. Here I disagree that Malamud discloses these limitations. First, assuming that Malamud's application itself could be the "content information" (with which I disagree) this limitation is not met in the first place because the cursor modification does not follow the receipt of the Malamud application. The application would have to be installed first, then the user would have to associate which Windows icons to associate with which information cursors and then enter the visual image to be displayed.

189. Mr. Goodin offers no opinion how a Malamud information cursor includes a visual image that tracks the movement of the modified cursor. His explanation in ¶ 503 of his report addressing this limitation instead concerns how the included visual image "relates to the [] icon." This is a non-trivial omission.

190. During the prosecution of the application leading to the '241 Patent, on February 8, 2011, by Examiner's Amendment attached to the Notice of Allowability, the Examiner added the "tracks a movement" limitation in allowing the claim to issue over prior art. See Exhibit E.

191. US Patent Nos. 6,018,345 ("Berstis") and 5,956,484 ("Rosenberg") were specifically cited and distinguished by the Examiner as not meeting the "tracks a movement" limitation. Yet in Berstis, there was a cursor image modification when the user scrolled over a link. Therefore, any image that was part of the modified cursor image would inherently move

along with it. This is why an image that is simply part of the modified cursor image cannot be considered to "track."

192. Said another way, an image that is "part of the cursor" does not "track" itself. In order to "track" the movement of the "modified cursor image" as required by this claim limitation, the visual image cannot be part the modified cursor image--unless that visual image itself changes in accordance with the movement of the modified cursor. This is shown, for example, in the embodiment disclosed in the '102 specification, in which a straw that is integrated with the modified cursor actually rotates in accordance with the modified cursor's movement. An image that is not part of the modified cursor can also track its movement by changing or moving in accordance with the movement of the modified cursor image, such as by being programmatically tied to movement of the modified cursor image. For example, the '102 specification describes satellite images that become programmatically included with the modified cursor image because they move or change in accordance with modified cursor image, such as the animated birds embodiment.

193. As Mr. Goodin expresses no opinion regarding altering Malamud to modify a cursor image to include a visual image that tracks its movement, I will reserve my right to express such an opinion if any such opinion is presented.

VIII. NON-OBVIOUSNESS OF THE ASSERTED CLAIMS IN VIEW OF NIELSEN IN COMBINATION WITH MALAMUD

194. I will first make a few general observations before addressing Mr. Goodin's opinions in his ¶¶ 297-342.

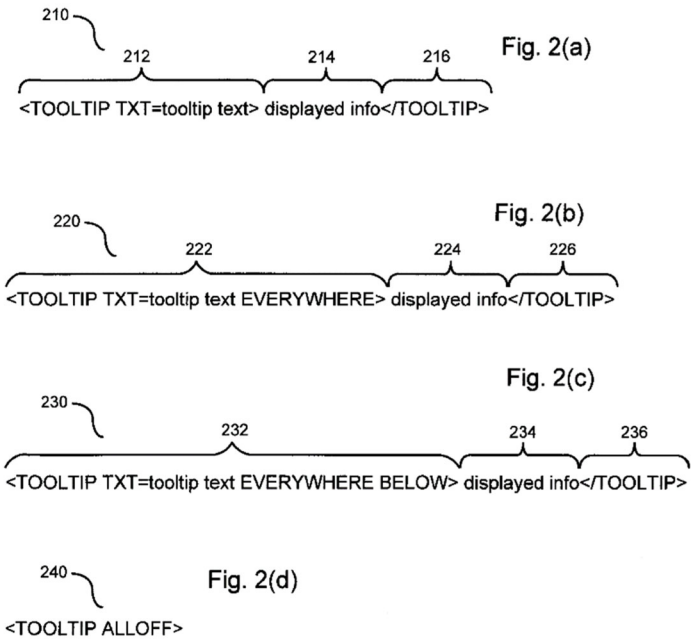
195. Nielsen is directed to a specific extension of the HTML standard that added a feature called "tooltips" to the standard. A webpage developer can place into an HTML file, adjacent to any webpage content they wish to display, a tooltip tag and enter content they wish

to be displayed in a tooltip box when a cursor is positioned over particular webpage content for a specified period of time. As Nielsen explains:

> The present invention allows for the use of tooltips in Web Pages. Thus, any information displayed on display device 160 by browser 130 can have a tooltip associated therewith. When the user places the cursor on a predetermined location on display device 160 for a predetermined period of time, tooltip text is displayed, providing further explanation of the information at the predetermined location. In a preferred embodiment, Web Pages Specified using the present invention can still be displayed using Web browsers that have not been enhanced to recognize tooltips because these browsers will simply ignore the tooltips tag.

Nielsen at 3:34-45.

196. Thus, the web developer is able to insert tooltip tags into the webpage's HTML file



next to various pieces of webpage text for which they wish a tooltip to be displayed. Because Nielsen's specification is directed to explaining this new feature of HTML, and its use requires proper use of HTML language, a great deal of Nielsen's specification is directed to the various valid HTML formats for tooltip tags, as show in FIGS. 2(a)-2(d):

197. As shown, the webpage developer can insert into the webpage's HTML file a pair of tooltip tags around the portion of webpage text for which a tooltip is desired to be displayed, specify the tooltip text, and specify whether this tooltip text should be displayed over every instance of the webpage text.

198. In a primary example given, shown in FIG. 4, the tooltip text "London Heathrow" will appear over the webpage text "LHR" when a cursor has been positioned somewhere over "LHR" for a sufficient length of time. Likewise, the tooltip text "Universal Airlines" will appear above the webpage text "UA" and the tooltip text "San Francisco" will appear over the webpage text "SFO."

199. As Nielsen describes, all the webpage developer has to do is enter the following metadata into the HTML file for this to occur:

> <TOOLTIP TXT-"Universal Airlines'
> EVERYWHERE > UA&/TOOLTIP>
> Feb. 15, 1996 0931 <TOOLTIP
> TXT-"London Heathrow
> EVERYWHERE > LHR </TOOLTIP>
> <TOOLTIP TXT-"San Francisco'
> EVERYWHERE > SFO &/TOOLTIP>
> 5368 6710 12078
>
> Nielsen at 4:58-67.

200. Because browsers that support HMTL include code to execute these HTML instructions, the webpage developer does not have to provide code to the browser to make a tooltip appear on the user's display, but only supplies data surrounded by tags.

201. Nielsen is not directed to modifying cursor images. Figures 6a, 6b, and 7 provide flowcharts that do not describe methods for modifying a cursor using a conventional client-server architecture. There is no description of any cursor modification. And a tooltip is not a cursor nor is it a cursor image. It is simply a block of text that is displayed next to an associated

webpage object. The tooltip does not move, nor would it make any sense in Nielsen for it to move because the point of Nielsen is to show the tooltip near the associated webpage text.

202. Rather, Nielsen is directed to the use of a special HTML extension added to the HTML standard to displays "tooltips." Similar to Malamud's application taking advantage of an embellished operating system that supports information cursors, Nielsen discloses the use of this special extension built into HTML to display the "tooltip." Specifically, Nielsen discloses that a web designer can add a "Tooltip" tag into a webpage's HTML that invokes the tooltip functionality of HTML and "specify the tooltip text that will be displayed when the cursor reaches the specified text." The tooltip does not modify or transform a cursor image. Rather, a tooltip text "preferably will be displayed in proximity to" some associated text field when the cursor is moved over that text field. This is shown and described in Nielsen's Fig. 8 and at 6:21-32.

203. Nielsen is narrowly directed to a specific HTML extension in which the tooltip is automatically generated by the HTML; all the programmer has to do within the webpage's HTML file is to enter, next to the webpage text for which a tooltip is directed, two tooltip tags and the desired tooltip text between the two tags. The tooltip tags have nothing to do with modifying a cursor image and Nielsen's tooltips are very different in purpose to the cursor image because the tooltip is only relevant when in proximity to a given relevant word. Therefore, you would not want the tooltip to be displayed when the cursor image is located in a position that is not proximate to the word.

204. Malamud is likewise narrowly directed to an embellished operating system (e.g., some modified version of Windows 3.1) that is specifically built to support the information cursor types used by the Malamud application. In other words, the operating system already

has been specifically coded with instructions to display the user designated type of information cursor and the information input by the user to display within the information cursor.

205. Furthermore, the tooltip taught by Nielsen does not appear in response to movement of a cursor over a display of information. Rather it is the absence of movement when the cursor is positioned over relevant text that makes a tooltip appear because Nielsen teaches that a cursor must be positioned over the associated webpage content for a specified period of time before the appearance of a tooltip is triggered. Nielsen at 3:34-45.

206. In contrast, the Common Specification provides extensive teachings on how to implement a cursor image modification. For example, the description spanning from 8:39-11:60 (and associated figures) specifies the required structure of an HTML file that implements the cursor image modification.

207. The disparate and limited respective environments of Nielsen and Malamud reinforce that a POSITA would not have been motivated to combine them to arrive at the Challenged Claims.

208. Therefore in my opinion there is not only no support for the suggested combination but there is no reasonable expectation that a tooltip could even successfully fulfill its intended function if displayed in a modified cursor.

209. While I agree that Nielsen does disclose sending specific webpage text for display, and tooltip tag pairs with tooltip text between them that instructs the browser to display the tooltip text when the cursor is positioned over that specific webpage (see 1:18-26, 1:51-57, 3:36-41, 3:46-4:7), for at least the reasons given above, the only motivation or expectation of success I see in the record comes from the Common Specification itself. A POSITA would not have been motivated to modify Nielsen's tooltip into a cursor modification nor would a

POSITA have had any reasonable expectation that the tooltips would function as intended if displayed over unrelated text. Indeed, given the nature of a tooltip being relevant only to a specific piece of text such a modification would be unworkable because a tooltip would be displayed when the cursor was positioned over unrelated text.

210. I am advised that both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the applicant's own disclosure.

211. But even had there been any motivation to combine Nielsen and Malamud, I do not agree that a POSITA would modify an HTML extension to perform a cursor image modification as taught by the Common Specification or modify an equally narrowly tailored Windows application designed to work in conjunction with a specifically embellished operating system to implement a cursor display instruction and cursor display code in an HTML setting with a reasonable expectation of success to arrive at any of the Asserted Claims.

212. Regarding my disagreement with Mr. Goodin's opinions that claim 72 is rendered obvious by a combination of Nielsen and Malamud, I offer the following additional reasons why it is not.

213. An online version of Malamud is not obvious because it would require access to a client's files structure names and icons to operate in the manner suggested by Mr. Goodin (and without the teachings of the common specification of the Asserted Patents) because it would require a browser supporting Malamud's functionality meaning that the browser would have to be embellished in the same way as the specialized operating system of Malamud that supports information cursors so that Malamud's application can interact with it. That is, the server purportedly providing the cursor modifications would have no way of knowing the particular file names contained in any directory on the client.

214. The TOOLTIP tag in the HTML does not constitute cursor display instructions and there would be no motivation to modify them to be cursor display instructions for the reasons I previously stated because they already by design only appear when a cursor is hovering over the associated object for which there is a TOOLTIP. Also, the fact that the TOOLTIP is not displayed when the cursor has moved over the object but rather only when it has been positioned over an object is by design because it is not desirable for a TOOLTIP to be instantly displayed when the cursor has been moved over the object. Rather, the user must indicate a desire to see the tooltip by having hovered over the object over a specific period of time. This is contrary to the requirement of claim 72 that the cursor modification be responsive to movement of the initial cursor image over the object, *i.e.*, there is no pause.

215. It is for the same reason also contrary to the teaching of Nielsen to always show a TOOLTIP box with some content unrelated to the object that the cursor has been moved over or to even to keep having TOOLTIP instantly appear as you move a cursor around the screen. It would be annoying and create confusion, particularly if the TOOLTIP contained a graphic or was large or in a densely populated screen. Such a modification would simply be unworkable. Eliminating the pause before the TOOLTIP is displayed would be unworkable for the same reasons.

216. Consequently, I disagree fundamentally with Mr. Goodin's analysis that this combination renders claim 72 obvious.

A. Limitation 72[Preamble] A method for modifying an initial cursor image displayed on a display of a user terminal connected to at least one server, comprising:

217. Nielsen does not teach a modified cursor, but rather teaches a tooltip in which text and/or a graphic relating to the object to which the cursor is pointing is displayed in proximity

to the displayed object to which the cursor is pointing, instead of being displayed in association with the cursor.

218. Nielsen is not directed to modifying cursor images. Rather, Nielsen is directed to the use of a special HTML extension added to the HTML standard to displays "tooltips." Similar to Malamud's application taking advantage of an embellished operating system that supports information cursors, Nielsen discloses the use of this special extension built into HTML to display the "tooltip." Specifically, Nielsen discloses that a web designer can add a "Tooltip" tag into a webpage's HTML that invokes the tooltip functionality of HTML and "specify the tooltip text that will be displayed when the cursor reaches the specified text." The tooltip does not modify or transform a cursor image. Rather, a tooltip text "preferably will be displayed in proximity to" some associated text field when the cursor is moved over that text field. This is shown and described in Nielsen's Fig. 8 and at 6:21-32.

219. A tooltip is not a cursor, nor is it a cursor image. It is simply a block of text that is displayed next to an associated webpage object.

220. There would be no motivation to combine Nielsen and Malamud. The tooltip does not move, nor would it make any sense in Nielsen for it to move because the point of Nielsen is to only show the tooltip when the cursor is near the associated text.

221. The disparate and limited respective environments of Nielsen and Malamud reinforce that a POSITA would not have been motivated to combine them to arrive at claim 72. The HTML "tooltip" extension is specifically designed to only display the tooltip when the cursor is over the associated webpage text, so the user's attention is already focused on the relevant webpage text for which it is desirable to show a tooltip. It would be contrary to the teachings of Nielsen to show the tooltip any other time because the cursor may be far away

from the relevant text. Imagine, for example, the tooltip displaying "London Heathrow" when the cursor is not positioned over the "LHR" text but rather positioned over some other webpage text representing another airport or some other unrelated text. Now instead of a relevant tooltip, there would only be user confusion. Thus, there is no support for the suggested combination and there is no reasonable expectation that a tooltip could even successfully fulfill its intended function if displayed in a modified cursor according to Malamud.

222. The suggestion to combine references and the reasonable expectation of success of the combination must be founded in the prior art, not in the applicant's disclosure. A POSITA would not have been motivated to transform Nielsen's tooltip into a cursor modification, nor would a POSITA have had any reasonable expectation that the tooltips would function as intended if displayed over unrelated text. First, Nielsen only instructs a POSITA that there has been an addition to the HTML standard that can be used by a webpage developer so that metadata (*i.e.*, a pair of tooltip tags bracketing tooltip content to be displayed) can be inserted in an HTML file next to webpage content and instruct the browser to display a tooltip content next to that webpage content, and only when the cursor is stopped for a minimum period of time over that webpage content. It does not suggest modifying the cursor or instruct how to do so.

223. Second, given the nature of a tooltip, the tooltip is relevant only to specific webpage content and therefore only displayed next to that specific content and only when the user's attention is already focused on that webpage content because the cursor is hovering over that webpage content. For example, a tooltip for "London Heathrow" is only relevant to the acronym "LHR" and therefore "London Heathrow" is only displayed when the cursor hovers over the text "LHR" for a sufficient period of time to indicate that the user's attention is focused

on that specific text. It would not be obvious to replace the tooltip with a modified cursor and the POSITA would be not motivated to do so because nobody would want the tooltip "London Heathrow" to be displayed as a modified cursor image when the cursor was moved over the letters "SFO" or any other text than "LHR" (or anywhere else on the webpage page far from the letters "LHR.") Nor would a POSITA be motivated to display tooltips in response to the movement of the cursor over some triggering webpage content, but rather the exact opposite -- the cessation of cursor movement for a specified minimum period of time. Given the disparate reasons for display and tooltip and a modified cursor image, trying to substitute a cursor modification for the display of a tooltip would be unworkable because a tooltip would be displayed as the cursor was moving over unrelated text.

224. Even had there been any motivation to combine Nielsen and Malamud, neither Nielsen nor Malamud teaches a POSITA to modify HTML to include requirements of an embellished form of Windows to support Malamud's application with a reasonable expectation of success.

A. Limitation 72[c][i]: transforming said initial cursor image displayed on said display of said user terminal into the shape and appearance of said specific image in response to said cursor display instruction, wherein said specified content information includes information that is to be displayed on said display of said user's terminal, wherein said specific image includes content corresponding to at least a portion of said information that is to be displayed on said display of said user's terminal

225. As discussed both generally and specifically above, there was no motivation for a POSITA to modify Nielsen's tooltips to make them part of a modified cursor image.

A. Limitation 72[c][ii]: wherein said cursor display instruction indicates a cursor display code operable to process said cursor display instruction to modify said cursor image to said cursor image in the shape and appearance of said specific image responsive to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal:

226. As discussed both generally and specifically above, there was no motivation to display tooltips in response to movement of the cursor, and, in fact, Nielsen taught away from such a requirement, because Nielsen deliberately provided a pause so that the user must stop moving the cursor (i.e., hover the cursor) over the associated text for a sufficient period of time before the tooltip was displayed. A POSITA would understand that this was to prevent the tooltip from being displayed in response to mere motion because then tooltips would appear anytime a cursor was moved over an associated object (i.e., an object having an associated tooltip) which would cause confusion and disruption to workflow, in particular, when graphics were involved.

A. '449 Patent, Claims 1, 27, 38, and 53

227. For the same reasons that I have both generally and specifically set forth above, I disagree with Mr. Goodin's assertions as to this combination rendering claims 1, 27, 38 and 53 obvious, given their similar scope and requirements.

A. '241 Patent, Claim 35

228. My opinions regarding the lack of motivation to combine these references, the lack of any reasonable expectation of success, and the unworkability of their combination applies also claim 35 of the '241 Patent. Therefore, I disagree with Mr. Goodin's opinion that this combination renders claim 35 obvious given both the general and specific opinions I have previously expressed regarding them including in the context of claim 72.

229. Additionally, neither Malamud nor Nielsen discloses a cursor modification such that the modified cursor includes a visual image that tracks the modified cursor image unless read using Mr. Goodin's incorrect tautological interpretation of the claim. As I have previously discussed, Mr. Goodin's interpretation of the requirements of this claim would fail to give meaning to "tracks a movement" and "to include a visual image" claim restrictions, would contradict the file history, and would read out embodiments from the specification, as I have discussed above.

230. Also, a POSITA could not with reasonable expectation of success simply adapt HTML to support for an information cursor to make it comparable to the specialized form of Windows for which Malamud was adapted to be used. HTML is a standard protocol, and the idea of a POSITA changing it to make such support would involve undue effort to say the least, and would contravene industry standards. Only a customized browser would be able to interpret Mr. Goodin's flavor of HTML. And there is simply no teaching in Malamud to even explain how Windows could be modified to support information cursors in order to support Malamud's functionality.

IX. NON-OBVIOUSNESS OF THE ASSERTED CLAIMS IN VIEW OF PINARD IN COMBINATION WITH THE KNOWLEDGE OF A POSITA

231. I disagree that Pinard renders obvious any Asserted Claim challenged by Mr. Goodin. Pinard discloses a method of modifying a cursor into a functional cursor. As Pinard describes and shows, a cursor is modified "to one which related to the function upon occurrence of the function." Abstract. In Fig.3, for example, a modified cursor is displayed that indicates an incoming call, Fig. 4 indicates an incoming email and Fig. 5 indicates an incoming fax. There is no cursor modification as a result of moving the cursor over a portion of the displayed content, nor is there a specific image that corresponds to that particular triggering content.

There is also no included visual image that tracks the movement of the modified cursor image. Therefore it does not disclose or render obvious any of the Asserted Claims.

A. 1 [pre], '449 Patent: A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:

232. Regarding the preamble, as Mr. Goodwin acknowledges, "Pinard teaches when an external stimuli is received by the user terminal a function occurs and the cursor itself changes to an icon related to the function." Goodin Rpt. at ¶ 345. Pinard therefore is not directed to, and does not disclose, the claimed a server system because it does not teach the required "specific image" called out in the preamble, because the shape and appearance of the modified cursor in Pinard relates to the function.

B. 1[a], '449 Patent: cursor image data corresponding to said specific image;

233. Pinard does not teach this limitation. There is no request to provide specified content information from the server and such a request would make no sense since it is the server that pushes to the terminal a signal that there has been an incoming communication received at the server and it is based upon the receipt of that signal that Pinard makes a cursor modification to the cursor indicating that the communication has been received. See Pinard, 3:13-19.

C. 1[d], '449 Patent: said cursor display instructions and said cursor display code operable to cause said user terminal to display a modified cursor image on said user's display in the shape and appearance of said specific image, wherein said specified content information is transmitted to said remote user terminal by said first server computer responsive to a request from said user terminal for said specified content information, and

234. Regarding limitation 1[d], Mr. Goodin fails to show a request to the server for the specified content information as I have already discussed. This requirement is not disclosed by Pinard.

D. 1[e], '449 Patent: wherein said specified content information further comprises information to be displayed on said display of said user's terminal, said specific image including content corresponding to at least a portion of said information to be displayed on said display of said user's terminal, and

235. Mr. Goodin also never addresses how the modified cursor corresponds to the information to be displayed. Rather he only reiterates that the graphical image of the modified cursor "the user terminal will display an appropriate icon (related to the incoming function)…" Goodin Rpt. at ¶ 357. This element is not disclosed by Pinard.

E. 1[f], '449 Patent: wherein said cursor display code is operable to process said cursor display instruction to modify said cursor image to said cursor image in response to movement of said cursor image over a display of said specific image in response to movement of said cursor image over a display of said at least a portion of said information to be displayed on said display of said user's terminal, and wherein said specific image relates to at least a portion of said information to be displayed on said display of said remote user's terminal.

236. Mr. Goodin presents no analysis explaining to what content to be displayed the specific image of the modified cursor image corresponds. Instead, he reiterates that the cursor modification is based upon a function, such as the receipt of an incoming communication. Nor does Mr. Goodin provide analysis of what information to be displayed (to which the specific image of the modified cursor image corresponds) triggers a cursor modification. Mr. Goodin makes a conclusory statement that a POSITA would be motivated to modify the cursor image based upon movement of the cursor over information to be displayed. However, even this conclusory statement does not correctly match the claim requirement, because it leaves out the limitation that the specific image must also correspond to the information to be displayed that triggers the cursor modification. Further, he never supports this statement with any factual basis or reason. The only reason he supplies is that because the cursor would be modified at some point in time back to the initial cursor image, this would somehow suggest to a POSITA to modify Pinard to meet this limitation, but never offers why. Even if a user's attention is

focused on where the cursor is, that is not an explanation of how this claim restriction would be obvious. I therefore, disagree with his opinion that a POSITA would be motivated to modify Pinard to meet this limitation.

F. '449 Patent, Claims 38, and 53

237. For these same reasons as stated above in reference to claim 1 of the '449 Patent, I disagree with Mr. Goodin's opinion that claims 38 and 53 of the '449 Patent are obvious in light on Pinard, as these have the same substantive requirements and the same flaws in Mr. Goodin's analysis apply.

G. '241 Patent, Claim 35

238. I will address here ¶¶s 521-540, in which Mr. Goodin opines that Pinard renders obvious claim 35 of the '241 Patent. I disagree for at least the reasons below.

239. Regarding 35[preamble], Pinard does not disclose the recited system of modifying the cursor image. Rather, as Mr. Goodin acknowledges, the system of Pinard discloses modifying the cursor image to one "related to the function." Goodin Rpt. at ¶ 524.

H. 35[a] at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image

240. Regarding limitation 35[a], I disagree with the notion that the server necessarily sends both the icon to display and the signal to display it. However, even if that were the case, I disagree that Pinard discloses this limitation because it does not contain the recited content information, cursor display instruction or visual image as required by limitations 35[b] and 35[c]. Moreover, it would make no sense in Pinard for the server to send a visual image to the remote computer, which already must include a program to respond to the notice of an incoming communication from the server and would naturally have the modified cursor image

stored locally. Otherwise the same image would have to be unnecessarily repeatedly be transmitted.

I. 35[b] following receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image,

241. Regarding limitation 35[b], Pinard only discloses that modified cursor image indicates having received a given type of communication. It does not disclose that the cursor image is modified to include a visual image. Mr. Goodin therefore does not address the requirements of this limitation, wherein the included visual image tracks the movement of the modified cursor image, as required by limitation 35[c]. .

J. 35[c] wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image.

242. Regarding limitation 35[c], here again Mr. Goodin makes no attempt to show that this claim restriction is met. All he states is that "'upon receiving these signals, the user terminal will display an appropriate icon (related to incoming function)' as the moveable cursor [image]." Goodin Rpt. at ¶ 533. But this does not meet the limitation.

243. As to the obviousness of modifying Pinard to meet the limitations of 35[b] and [c], the rationale Mr. Goodwin offers is either related to having the cursor be modified when it relates to the desirability of modifying the cursor when it is moved over a certain area of the user's display or the desirability of reverting the cursor back to its initial image after a certain period of time. But neither of these is a rationale for having the modified cursor include a visual image that tracks its movement. As such, Mr. Goodwin offers no motivation to modify Pinard to meet this claim limitation and I disagree this limitation is met because Pinard does not teach modifying a cursor image to include a visual image that tracks its movement as required by the claim.

X. NON-OBVIOUSNESS OF ASSERTED CLAIMS IN VIEW OF LIU IN COMBINATION WITH THE KNOWLEDGE OF A POSITA

244. Liu discloses a system for mirroring a window displayed on the screen of a first computer so that the same window is displayed on the screen of a second computer. In addition to mirroring the screen, the system also mirrors the cursor image displayed on the first computer so that the same cursor image is displayed at the same position in the window at the second computer. Also, if the screen of the second computer has a different size than the screen of the first computer, both the mirrored window and cursor are scaled appropriately. Liu does not disclose modifying the cursor image into the shape and appearance of a specific image responsive to the movement of the cursor over a portion of the content to be displayed, wherein the specific image of the modified cursor image includes content corresponding to that portion of the content to be displayed. Nor does it disclose modifying a cursor image to include a visual image that track the modified cursor image.

A. '102 Patent, Claim 72

245. Turning first to ¶¶ 204-226, I disagree with Mr. Goodin that Liu renders claim 72 obvious because it does not disclose or suggest the claimed cursor modification method.

246. Liu does not disclose actually modifying the cursor at the second computer and I disagree with Mr. Goodin's statements in ¶ 206 indicating that it does. The cursor image and position from the first window is merely displayed on the second window. Mr. Goodin points to no statement in Liu that second computer has its cursor modified. I therefore do not agree that Liu is a cursor modification method of any kind.

247. Regarding limitation 72[a], Mr. Goodin never identifies what request is made by the second computer. Rather, as Mr. Goodin states in ¶ 208, "[i]n the continuous window sharing system disclosed in Liu, window updates from a first computer workstation (server)

are continuously intercepted and transmitted to second computer workstation (user terminal), where they are applied to the mirror window of the first computer work station at the second computer work station." Consequently, this limitation is not disclosed.

248. I also disagree that a POSITA would be motivated to modify Liu from a push system to a pull system because it would make no sense for the second computer to have to query the first computer for updates.

249. Regarding limitation 72[b], there is no response because there is no request and Mr. Goodin points to none. And there would be no reason to modify Liu to require a request and a response, as I have already discussed. Indeed, such a modification would likely make the system unworkable due to lag, certainly during the priority date. Also there is no cursor display instruction because there is no cursor modification. Moreover, there is no motivation to actually modify the cursor at the second computer because that would mean that the user of the second computer would lose control over their actual cursor and could not operate it. Consequently, this element is not disclosed nor rendered obvious by Liu.

250. Regarding limitations 72[c] and [d], there is no cursor modification and Mr. Goodin identifies none. The cursor image displayed on the second computer is not actually a cursor image that the user controls at the second computer. Mr. Goodwin offers no analysis regarding the obviousness of making a modification to Liu to effect an actual cursor modification at the second computer, and to do so would run contrary to the purpose of Liu which is to mirror on the second computer the window and cursor image/position at the first computer—which the user of the first computer controls. Therefore there is no specific image that comprises the shape and appearance of a modified cursor image at the second computer. Even the resized cursor image is not a modified cursor image because it is not movable by the user of the second

computer. Mr. Goodin offers no opinion as to modifying Liu to meet these claim elements.

251. Regarding limitation 72[e], again Mr. Goodin provides no analysis of what information to be displayed (to which the specific image of the modified cursor image corresponds) triggers a cursor modification.

252. To the extend Mr. Goodin asserts that a POSITA would be motivated to modify the cursor image at the second computer, he does not explain why. Nor does he explain why Liu would suggest to a POSITA, or a POSITA would have been motivated, to modify Liu to make a cursor modification at the first computer. I disagree with his opinion that a POSITA would be motivated to modify Liu to meet this limitation.

B. '449 Patent, Claims 1, 38, and 53

253. For these same reasons, I disagree with Mr. Goodin's analysis in ¶¶ 397-424 regarding claims 1 and 38 of the '449 Patent, which have the same substantive requirements, and the same flaws in Mr. Goodin's analysis apply.

254. For these same reasons, I disagree with Mr. Goodin's analysis in ¶¶ 425-447 regarding claim 53 of the '449 Patent, which has the same substantive requirements, and the same flaws in Mr. Goodin's analysis are present.

C. '241 Patent, Claim 35

255. I will address here ¶¶ 541-559 in which Mr. Goodin opines that Liu renders obvious claim 35 of the '241 Patent. I disagree for at least the reasons below.

256. Regarding 35[preamble], Pinard does not disclose the recited system of modifying the cursor image. Rather, as Mr. Goodin acknowledges, the system of Liu mirrors a first window and cursor within the window on a first computer and mirrors the window at the second computer. *See* Goodin Rpt. at ¶ 544.

257. Regarding limitation 35[a], I disagree with notion that the server necessarily sends both the icon to display and the signal to display it. However, even if that were the case, I disagree Liu discloses this limitation because it does not contain the recited content information, cursor display instruction or visual image as required by limitations 35[b] and 35[c]. There is no cursor modification at the second computer and there would be no motivation to include such a cursor modification in Liu for the reasons I have already discussed.

258. Regarding limitation 35[b], Liu only discloses that a cursor image is substituted to one that indicates the function of having received a given type of communication. It does not disclose that cursor image is modified to include a visual image. Mr. Goodin therefore does not address the requirements of this limitation, which is not directed to a mere substitution of a cursor image, but rather to including a visual image that tracks the movement of the modified cursor image, as required by limitation 35[c]. I disagree that Liu discloses this limitation for this additional reason.

259. Regarding limitation 35[c], here again Mr. Goodin makes no attempt to show that there is an actual cursor modification at the second computer and that the cursor is modified to include a visual image meeting the claim's requirements.

260. As to the obviousness of modifying Liu to meet the limitations 35[b] and [c], Mr. Goodwin offers no motivation for modifying the cursor at the second computer to include a visual image that tracks its movement. I disagree that this limitation is met because Liu does not show modifying a cursor image at either computer to include a visual image that tracks its movement.

XI. NON-OBVIOUSNESS OF THE ASSERTED CLAIMS IN VIEW OF THE ADVERACTIVE GAMES IN COMBINATION WITH THE KNOWLEDGE OF A POSITA

261. As an initial matter, it is not my understanding that a collection of different "Adveractive Games" can be asserted as anticipating, because anticipation requires a single reference. Therefore, I disagree with Mr. Goodin's offer of a combination of five (5) games/baubles as anticipating, particularly when he maps various claim restrictions onto features from different games in the combination. Moreover, Mr. Goodin, offers no motivation to combine any of these games with another of the games.

262. Mr. Goodin does not disclose a date for the Bowling Game. Goodin Rpt. at ¶ 450. Unless Mr. Goodin or Defendants produces evidence corroborating such a date, I disagree that the Bowling game constitutes prior art, as it cannot be shown to predate the priority date of the Common Specification.

263. I also note that the Adveractive Games were not supported by a browser. The user would first have to install a Shockwave plug-in in order to play an Adveractive Game. The need for such installation would not lend itself to the advertising or promotional purposes to which the systems and methods of the Asserted Patents are directed.

264. Some of the games/baubles involved conventional drag and drop operations, such as depressing and holding a mouse button to move the bowling ball and then releasing the mouse button to launch the bowling ball. Adveractive's witness Steve Bullock testified as much in his deposition. See e.g., Exhibit F, Deposition of Steve Bullock ("Bullock Depo."), 232:6-14. Other Adveractive Games also involved conventional drag and drop operations to move objects. For example, in the Hummingbird game, the user could drag and drop a plant from one location to another, and in the Halloween game the user could depress and hold down a mouse key to grab a pie and then release the mouse key to "throw" the pie.

265. Some of these games/baubles involved a cursor modification, and some did not. None of these games disclosed each and every limitation of any Asserted Claim and none modified cursor image include a visual image that tracked its movement.

266. Nowhere in my infringement report is the opinion that the object of a drag and drop operation meets any limitation of any Asserted Claim. These objects are not included visual images in the context of the '241 Patent for a number of reasons, which I will discuss further in connection with various claim limitations below. It is also not my opinion that objects that are fixed on the display become part of the cursor. Nor is it my opinion that the explanatory box becomes "part of the cursor," and it certainly does not change in response to cursor movement. One could move the cursor around over the object and the box would still contain the same information. In other words, the same information is displayed whenever the cursor is over the object and the code only determines (yes or no) whether the cursor is positioned over the object. There is no change or movement of the text as a result of the movement of the cursor so the text does not track movement of the modified cursor. Indeed, I see no analysis from Mr. Goodin that there is any modified cursor associated with the display of text in an information box.

267. The Halloween Haunt game is also a drag and drop game. The user can depress a mouse button when they have moved the cursor over a pie in order to "hold" it and can release the mouse button to "throw" it. When the user clicks down on the mouse button, the cursor changes to a hand that covers a portion of the bottom surface of the pie. The system cursor is not replaced by a cursor image of a hand holding a pie. The cursor image is replaced by hand. Second, the hand image does not include any part of the pie image. On the contrary, the hand blocks the portion of the pie image beneath it. A conventional drag and drop operation does

not "include" the dragged and dropped object as part of the cursor image.

268. A POSITA would not both the specification and prosecution history that images that are a part of the modified cursor image are not do not track themselves.

269. The Hummingbirds and Prowler baubles do not involve any cursor modification. The Hummingbirds bauble does allow the user to click on a flower and move it. There is cursor modification upon the click and no analysis is needed here as to whether there is any modified cursor image that includes a visual image that tracks its movement. Likewise, there is no cursor modification in the Prowler game either.

270. When the Court is referring to a cursor image that is "controlled through a user interface," this phrase refers to "gestures to control mouse movement."

A. Limitation 1[pre] A server system for modifying a cursor image to a specific image having a desired shape and appearance displayed on a display of a remote user's terminal, said system comprising:

271. Putting aside issues of when various games were available for download, as Mr. Goodin relies upon, he presents no evidence that any of the Adveractive games or baubles actually ran upon download. It is my understanding that someone who wanted to "play" would have to at least download a Shockload plug-in. It is also not clear whether they would have to take additional steps. I also disagree that each game disclosed any method of modifying an initial cursor image. For example, in the Hummingbirds and Prowler baubles, the cursor image does not change.

B. Limitation 1[a] cursor image data corresponding to said specific image;

272. I do not agree with Mr. Goodin's statement at ¶ 450 that the "various right and left-handed cursor [images] are "specific images," as required by the claim.

Exhibit F



Transcript of Stephen Bullock

Date: September 12, 2023
Case: Lexos Media IP, LLC -v- Amazon.com, Inc.

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WORLDWIDE COURT REPORTING & LITIGATION TECHNOLOGY

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

LEXOS MEDIA IP, LLC,

Plaintiff,

-vs- Case No. 2:22-cv-00169-JRG (Lead case)

AMAZON.COM, INC.,

Defendant.

LEXOS MEDIA IP, LLC,

Plaintiff,

-vs- Case No. 2:22-cv-00175-JRG (Member case)

TARGET CORPORATION,

Defendant.

LEXOS MEDIA IP, LLC,

Plaintiff,

-vs- Case No. 2:22-cv-00273-JRG (Member case)

OFFICE DEPOT, INC.,

Defendant.

VIDEOTAPED AND VIDEO CONFERENCED
DEPOSITION OF
STEPHEN BULLOCK

Taken by the Defendants
Durham, North Carolina
September 12th, 2023

Reported by: Lisa A. DeGroat, RPR
Notary Public

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Corey Parker, videographer

VIDEOTAPED AND VIDEO CONFERENCED DEPOSITION OF STEPHEN BULLOCK, taken by the Defendants, at the office of Regus, 2530 Meridian Parkway, Suite 300, Durham, North Carolina, on the 12th day of September, 2023, at 9:36 a.m., before Lisa A. DeGroat, RPR and Notary Public.

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THE VIDEOGRAPHER: Good morning. We're now on the record. Today's date is Tuesday, September 12th, 2023, and the time is 9:36 a.m.

This is the deposition of Stephen Bullock, in the case of Lexos Media IP, L.L.C. versus Amazon.com, Incorporated.

Counsel, please, introduce yourselves. After which, our court reporter will swear in our witness.

MR. KELLEY: This is Chris Kelley and Kay Li for the defendants.

MR. SETH: Sandeep Seth, attending and questioning the witness on behalf of Lexos Media, plaintiff.

PROCEEDINGS

* * * * *

Whereupon,

STEPHEN BULLOCK,

having first been duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLEY:

Q. Mr. Bullock, good morning.

A. Good morning.

Q. Thank you for coming in. I thought we could start -- well, let me ask you this: Have you been deposed before?

A. Yes.

Q. And was it in a matter involving Lexos?

A. Yes.

Q. Okay. Do you remember the gist of your testimony on that day, and --

A. I do.

Q. Okay. And what -- do you remember that -- what year that was?

A. It was 2014.

Q. Okay. Now, I've read your transcript, and you mentioned -- you were deposed on two days; correct?

A. I was.

Q. And you mentioned in your transcript that you had reviewed your transcript for the first day and made a correction to it. Do you recall that?

A. I -- I -- yes.

Q. Okay.

A. Generally. I don't remember exactly -- oh, I know. It had to do with a document of some sort or --

Q. Yeah.

A. A bookkeeping document.

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Q. Right.

A. Right.

Q. Yeah. We can -- we can look at it, if you want, but you -- since that time you haven't -- have you had occasion -- have you been made aware of anything that you said on that day that you believe was incorrect?

A. No.

Q. Okay. So, as far as you know, setting aside the one correction you mentioned on the second day of your deposition, you have -- you don't have any reason to think that anything you said on that first day --

A. No.

Q. -- was inaccurate?

A. No, I don't.

Q. Okay. Maybe some of this is going to be repetitive from that deposition.

A. Okay.

Q. But maybe you can just give me a brief outline of your educational and then work history.

A. Okay. Education. After high school, I attended the University of Virginia. Graduated with a B.A. in 1973 in -- in liberal arts basically.

And then went to the -- what was then called the American Graduate School of International Business

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in -- in Glendale, Arizona. And almost graduated from there in 1975, but -- I came within a couple of hours. I had like a 4.0 grade point average, but I lacked like one course.

And I had a job offer, and I took the job offer. Meaning to complete the course the next summer, and I never completed the course. I had a job. That was the goal. I then -- that's my education.

Q. Uh-huh, yeah. And then so, if you could, just go through your work history.

A. Work history. From that January of 1975 through December of 1982 I worked for a company named Bucyrus-Erie, B-U-C-Y-R-U-S, dash, E-R-I-E. They were headquartered in Milwaukee, Wisconsin.

I had first started as a sales rep and then became a marketing manager. And then -- or a product manager. And then the marketing manager for a division of the company. And then general manager of their subsidiary in South Africa.

And then resigned from that in -- in 1982 because my life priorities were changing. 19 -- I decided I was -- I would like to buy a camera store. I did find one in Chapel Hill, North Carolina in 1983.

In August 1st, 1983 I purchased Foister's

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Camera Store. I and my wife. We purchased Foister's Camera Store. I basically had that store for five years, and I couldn't make any money in it, because the camera business was evolving.

You know, we were getting, you know, beat by the big chains and everything else. So I sold the camera store in 1988.

In 1989 I went to work for North Carolina's then preeminent chain of bookshops. I had known the owner, who was a gentleman, Wallace Kuralt, the brother of Charles Kuralt, the pretty famous guy back at the time.

And -- and I was in the book business for basically another five years with them. Executive vice president. But the writing was on the wall. You know, my timing in retail was lousy.

It was -- you know, this was -- this was when Barnes & Noble and Borders were -- were -- were -- were -- were just beating the heck out of the little independent bookstores.

And the bookstore was getting further and further into debt, and I -- the writing was on the wall. And as much as I loved the Kuralts and loved working there, it was like I had to find something else to do.

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So that's when I switched. I had a great interest in multimedia. I took a course or two at a local community college on -- on multimedia. I had had a little bit of programming experience, both in the bookshop and at the camera store and doing some -- writing some code for -- for -- for various things, databases and stuff, and realized that I had a proclivity and ability to -- to write code and -- and do computer things.

And self-taught. Pretty -- 99 percent. And decided my future was in multimedia. And in 1994 multimedia was CD-ROMs. And I had -- my business was named Adveractive. And that came from a combination of the words advertising and interactivity.

And -- so I, you know, started Adveractive 1994-ish. Might not have been -- yeah, I think it was incorporated in '94. And didn't really realize what the internet was in 1994.

I was like, the world is CD-ROMs, but late in that year all of a sudden this internet thing started to happen. And, you know, it was the age of the 14.4 modem and things.

And -- and then in 19 -- December of 1995 -- and I'll always remember this. It was all of a sudden, you could do the sort of multimedia that I was

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doing for CD-ROMs, and you could do it on the internet and show it to people all around the world.

And it was like, wow, this is cool, you know. If I'm going to get into multimedia, I should probably look into -- you know, I should probably do it on the internet.

And I had -- realized I had an ability. And I had one graphic artist. It was me and one artist. And had an ability and enjoyed doing like games. Small, simple games.

But realized that that was something I could do on the internet as well. And it -- the beginning of that -- that year, 1996, I told my single employee, I said, our future is on the internet. We're going to make games.

And it's like -- and then it was like ten months with zero revenue, you know. And I had actually told him that if something didn't break loose soon that he should start looking around for other -- other work possibilities. And that was probably August or September of 1990 -- '96.

And all of a sudden some things broke through with -- with Coca-Cola Japan and a bowling game that we had done. And all of a sudden we actually had revenue. And that was the beginning of

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the business I continue to be in to this day.
I don't do internet games anymore. I'm doing apps. You know, have done apps for the last seven or eight years, but -- and, in fact, that was something that I wasn't doing really in 2014, was the app business. And nowadays that's pretty much all that I do. So --
Q. And these are apps for mobile phones mostly -- mostly?
A. Mobile phones and tablets, you know.
Q. And are you still writing the code for these apps yourself?
A. I'm still -- yeah. You know, I'm 72. I'm not -- I'm maintaining these apps. I have --
Q. Yeah.
A. -- four or five successful apps that bring in, not a giant amount of money, but, you know, it's like a quarter of a million dollars a year.
Q. Uh-huh.
A. And nowadays I'm simply maintaining them, because it takes two years to develop a new game. And I don't -- you know, I'm ready to get out of it.
Q. Uh-huh.
A. I'm on the verge, I think, of retirement.
Q. Now, but the apps when they were -- when

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they were new, did you write the code for them --
A. Yup.
Q. -- or --
A. Yup, yup, yup, yup, yup.
Q. And you wrote the code in what -- what language? What was the format of the --
A. These -- these days -- the apps are written in -- in a language called Corona.
Q. Uh-huh. Okay.
A. Corona SDK.
Q. Now, you mentioned that in 1995 you could do multimedia on internet, and --
A. Right.
Q. -- then you had started doing multimedia in 1994; is that --
A. You're right. I started doing inter -- multimedia in 1994 for -- to develop CD-ROMs.
Q. And what tools were you using in 1994 for that?
A. Macromedia was the name of the -- of the parent company, and their product was called Director. Macromedia Director.
Q. And then in 1995 Macromedia on the internet, I take it, that was Shockwave then?
A. Well, Macromedia -- it was really Director.

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You still developed everything in Director, but in December -- in -- of 1995 they had a fairly open public beta.
It was still a beta, but big announcements, you know, developer conference we can do games. You know, we can do interactivity on the internet. And it was really the first -- it was before Flash.
It was before a lot of other technologies. And it was before HTML5 and things that you have today. But it was the first real way to do something that, you know, had, you know, sound and motion and changing graphics and video, if you wanted to put video in it. And you could all do it over -- over -- over a screen, you know, over -- and a browser.
Q. Uh-huh. So Director, as an application, this was designed to -- or -- let me strike that.
Director -- would you use the Director application or program to construct multimedia --
A. Correct.
Q. -- applications?
A. Correct.
Q. What was the interface like, in terms of -- how do you -- how do you put together an application when using Director?
A. Director was an interesting product, and --

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and -- and the counsel mentioned software, and, again, eventually Adobe bought Macromedia.
Q. Uh-huh.
A. Then it became Adobe Director, but back in -- but the original metaphor that they used in the program was one of a stage production.
In fact, the -- the cover of the -- the box you bought it in and the cover of the -- of the -- of the manual that told you how to use it had a picture of a director's chair. And, of course, that's where Director came from.
And the metaphor extended to the whole -- where the whole interface work. You had -- you had a stage. And you -- and you viewed your -- your multimedia on what they called the stage.
And then you had a score. You know, like a musical score. And the musical score was -- was 30 frames per second. And each frame would be -- would be, you know, shown by a vertical line, you know.
And you'd say, in this frame I want this to happen. And ten frames later I want something else to happen. So the -- the score took place over time. Okay?
And then you had a cast. And the cast was where you put your graphics, where you would put your

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text fields. It's where you could put your video. It was where you would -- could put -- you could put the things that would appear on the stage, were in the cast.

So they -- they really -- you know, they really used that -- that production metaphor of a stage production very much so in the -- in the whole program.

Q. Uh-huh. And -- go ahead.

A. And your -- and your code that you wrote, the programming code, was called Lingo, L-I-N-G-O. And the Lingo also appeared in your -- in your cast as individual cast members.

You know, it would be a chunk of Lingo to do this on the screen, you know, or on the stage. And another chunk of Lingo would do something else on the stage.

So it was -- you know, it was -- it was a -- you know, it had its time. And I still think to this day it was a very elegant -- very elegant kind of design.

Q. So these were all things -- all the things that you mentioned, there are pieces of your multimedia presentation that you're assembling in the context of this Director app?

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A. Yes.

Q. And when you constructed a multimedia presentation, those elements, how did -- how did they get aggregated, so that they could be -- this -- the user --

A. Right.

Q. -- could see all of it? Could see the audio? Could hear --

A. Yeah.

Q. See the --

A. Okay.

Q. -- the graphics, et cetera?

A. In the days prior to Shockwave -- and I'm going to put that as a -- as a delimiter in there.

Q. Okay.

A. Okay. In the days -- in the years prior to Shockwave and Macromedia Director was around for several years -- I think the early 1990s, but two or three years before Shockwave -- they announced Shockwave.

But in those days you would -- you would create -- you would create using the cast and the score and look at what you've created on the stage.

Q. Uh-huh.

A. Okay. So you could -- you could have the --

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the stage run. And then you could rewind it, and you could run it again. You could stop it on this frame or that frame.

Remember, your score has frames. And you -- and you would view it there on the stage. And when you liked what you had to make a final product, you would basically publish it. And you would publish it as an executable file, an EXE file.

Q. Uh-huh.

A. And then that EXE file could run on somebody's PC or somebody's Mac. You know, there was -- you could publish it for Macintosh. You could publish it for PC.

And in -- or you could take that EXE file and put it on a CD-ROM, which was -- because multimedia tends to be large file sizes, you know. And particularly when you have sound and video involved.

In those days the CD-ROM was the typical thing you published to in order to distribute something to -- to many people.

Q. So the EXE would then in some manner contain the graphics?

A. It would. It would contain -- contain -- it would contain a compressed, you know, version of the

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cast and the code, you know, the programming code and the stage.

Q. Uh-huh.

A. You know, and be able to display it on -- on a person's computer screen.

Q. Now, were the -- were the resulting EXE files, were they interactive? Could the user --

A. Oh, yes.

Q. -- interact with them?

A. Yes. That's what -- that's what Director was known for, was -- was that it wasn't -- wasn't just a static show. It was something you could -- you would click on. You could navigate in different branches or different directions.

Q. And how would the user interact with the presentation?

A. With a mouse or a keyboard.

Q. Okay. Would -- the presentation, would they see the presence of their mouse? You know, would they -- was there a cursor in the --

A. Yes.

Q. -- in the presentation --

A. Yes.

Q. -- where they could see --

(COURT REPORTER'S CLARIFICATION.)

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MR. KELLEY: Yeah. Sorry.
THE WITNESS: Typically --
Oh, I'm sorry.
BY MR. KELLEY:
Q. No, no. That's fine. Let me ask the question again. We'll --
A. Okay. Go ahead.
Q. So was there a cursor that was present in the -- in the presentation so that the user could see where they were and how they interact?
A. Yes, yes. And -- and let me just say, that was much like any other program. An EXE is a program.
Q. Uh-huh.
A. And computer programs back in those days, virtually all of them, you know, you could see your -- your mouse moving around within the program in order to navigate and make choices within it. And Director program -- Director EXEs were no different.
Q. Yup. Okay. Could you -- when -- being the person who is constructing this presentation, could you determine where the mouse was and make things happen in the presentation based on that?
A. I could not. And there's -- to distinguish, I could not move a person's mouse.
Q. Yes.

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A. Okay. So -- but I could sense where the person had moved it to by checking its location and checking what it was over, what it was on top of. And, thereby, changing things within the program or on the screen, depending upon where the user had moved the mouse.
Q. Okay. Could you change the appearance of the -- the mouse? What's called the cursor commonly.
A. Yes.
Q. Okay. Now, you mentioned that the -- the executable file was -- well, the file that was distributed to customers was an executable file --
A. Yes.
Q. -- with an EXE extension. What was the extension for the file when you're putting the Director program together?
A. Okay. In my earlier answer I -- I said I was describing how things were before Shockwave.
Q. Yes.
A. So I'll take a second and talk about that -- that break in time.
Q. Please.
A. When Shockwave appeared, what Macromedia said was, we are going to have internet users download a plug-in. Okay? That's going to come down and sit

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on their computer and stay on their computer.
And it has all of the code that you would normally have in an executable to run the darn thing. You know, to make it actually run. But it won't have any of the graphics.
It won't have any of your custom sounds. It won't have any of your programming code that we, the developers, write. That is going to be contained in a second file called a DCR, with the DCR extension, rather an EXE extension.
And -- so you took the plug-in, which was there semi-permanently on the user's machine. They had to download it. They -- they couldn't run Shockwave without a plug-in.
But once they had the plug-in installed, then they could come to a web page that said, hey, here is a DCR that gets pulled off of a server somewhere. And it gets displayed in the user's page.
And the DCR and the plug-in together do the same thing that the EXE file would do, you know, as a -- as a standalone executable.
Q. Now, you mentioned that the Shockwave -- Shockwave thing on the user's computer was a plug-in. What was it a plug-in to?
A. A plug-in to the browser.

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Q. Yeah.
A. And back in the -- the era that we're -- we're all discussing, the early internet days, the primary browsers -- the dominant browser was Netscape. And the second browser was -- was Microsoft Explorer.
And in the case of Netscape, this was called a -- it was called a plug-in. What -- what came from -- you know, the Macro -- the Shockwave plug-in was -- that's what it was called in Netscape.
And then in -- on the Microsoft browser it was called an ActiveX control, was -- that was Microsoft's term for it. But they were essentially the same thing and had the same functionality.
Q. So, now, these DCR Shockwave files, how were they -- how would the user access them? If I'm -- if I'm on -- using my Netscape navigator browser, and I'm on the internet, how do I encounter DCR files?
A. Well, the internet is, of course, tied together by links from one page to the next page. You click somewhere on one page to go to another page or another website on the internet.
And in the case of a Shockwave file, a user would click on a link somewhere that would take them to a page. And on the page would be what in those days were called an HTML tag, you know.

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And the tag would basically call up a -- a Shockwave DCR to display that DCR on that page that the user had arrived at.

Q. So when you're -- so there might be HTML web pages that have a bunch of tags in them?

A. Right.

Q. Some of those tags display content on the user's browser; maybe text or pictures?

A. Right.

Q. And then another tag might be something that identifies a DCR file that could run on the web page?

A. Correct.

Q. And is that called an embed tag?

A. Yes.

Q. Okay. And you had occasion to write HTML code?

A. Yes.

Q. And you seem --

A. No. I just --

Q. -- hesitant.

A. I -- you know, my expertise was -- was -- was Shockwave --

Q. Right.

A. -- and doing DCRs. I wrote HTML pages and HTML code in order to write our own website. I didn't

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hire it out to a third party, but there were people who thought that, gee, I'd call up Adveractive, and they'll design my website.

And I would go, no. I am -- that's not our expertise. We are not website designers. We never set out to be.

So, yes, I write HTML code. At that time I wrote what I needed to to -- to, you know, do our own web pages, but I wouldn't have hired out as an expert to do anybody else's web pages.

Q. But you did write HTML web pages that people could access and that had these embed tags --

A. Yes, yes.

Q. -- to launch --

A. Yes.

Q. -- DCR files?

A. Yes.

Q. Okay. Do you have some familiarity with how the browsers would work with the HTML?

So let me -- let me be a little more concrete with that question. It's a little vague.

Are you familiar with HTTP --

A. Yes.

Q. -- generally?

A. Yes.

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Q. So you know that HTTP is the protocol that a browser uses to access web content --

A. Yes.

Q. -- correct?

A. Yes.

Q. How does a browser -- if I'm -- if I tell it to go to one of your web pages, say, for instance, one of the web pages that we'll talk about later that had some of your Shockwave baubles on it. How would the browser get that web page and what would it do? And I just --

A. How would it get --

Q. -- mean at a very high level.

A. Okay. At a very high level. Basically when the user clicks, he's given a -- he clicks on an address --

Q. Uh-huh.

A. -- to send -- to send his browser to another web page.

Q. Uh-huh.

A. And using the HTTP protocol, when he -- when he arrives at that page, the instructions -- the HTML instructions, things like the -- the embed tag, but other tags on it, say these are the assets you should go collect in order to display this page.

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And the assets might be the background graphic that goes on the page behind all of the text. Okay.

Q. Uh-huh.

A. It might be the text itself. Might be small static photos. And that -- it's using HTTP to communicate with the server in saying, give me those files. And those files then are sent to the browser.

The browser gets those files. Puts them all in your computer's memory, because you're -- you're on a computer doing this. And then as those -- as those files arrive the browser assembles the web page according to the instructions, you know, that are on that web page.

And it's basically using HTTP to talk to the browser -- or not -- I'm sorry. Talk to the server, rather, which is holding those assets that get displayed.

Q. And so one of those -- it makes an initial HTTP request to get the HTML for the web page?

A. Right.

Q. And then if it sees an embed tag for a DCR file, it'll make another HTTP request to go get that --

A. Yes.

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Q. -- DCR file?
A. And -- and the embed tag, like many of the tags on the page, contain the server's address for those secondary files.
Q. Uh-huh.
A. You know, the name of the file. Sometimes it says the directory in which to find it in on the server and things of that nature.
Q. Uh-huh. Okay. So -- and then the DCR file, you said it works with the plug-in to -- to render this multimedia presentation --
A. Uh-huh.
Q. -- that you or --
A. Uh-huh.
Q. -- someone else is crafting?
A. Uh-huh, yes.
Q. And so the DCR file -- am I correct in understanding that if the presentation has graphics, the DCR file will contain graphics?
A. Yes.
Q. And if the presentation is using Lingo code, the DCR file will contain some kind of instructions to implement the Lingo code?
A. Yes, correct.
Q. Okay. Now, going back to the user

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interaction with Director EXE file -- or let's -- let's now start talking about a DCR file.
The user is able to -- if the -- let me strike the question and start again.
If -- if your DCR file includes some kind of user interactivity, the user will be able to typically use their mouse to interact with different items in the presentation; is that correct?
A. That's very common. Yes.
Q. And -- and we talked about the cursor and being able to change the appearance of the cursor?
A. Yes.
Q. Is that something that you did in your work at Adveractive?
A. Yes.
Q. So what type of things -- how would you use changes to the appearance of the cursor?
A. You'd use -- you'd use a change to the appearance of the cursor to -- to indicate to the user how the cursor might -- might be used within the program.
Things like -- and there's -- and -- and a lot of this has -- has grown -- I mean, this goes back, I think -- may -- may go back -- I'm speculating a bit here, but I think I'm very accurate -- pretty

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accurate on this, but this goes back to the first mice, you know, at Xerox PARC, you know, in Palo Alto, when the -- they designed the interface that -- that Apple basically took, you know, and became the first Apple interface, where -- where -- whereas, a mouse is moved over things.
You change the appearance of the mouse in order to indicate, you know, that maybe if it changes from a pointer, you know, into a hand, you know, with the finger sticking up that, oh, I'm over something that I can click on, you know, a button.
Or if it changes from a pointer to something like an open hand, it's like, oh, I could take it and like -- and like I can wipe or I can move something with an open hand.
Or if you changed it -- if it was -- if you changed it to a finger. And then when you clicked the mouse, it changes to a fist, it's like, oh, that means I have grabbed something. And now I can move it with this fist, because it's a fist and no longer a pointy finger.
So those -- those are typical things that -- and I think that we take a lot of that for granted today, but it was pretty brilliant interface design, you know, at the time.

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And in our multimedia we did things very much like that. But then we also did some rather more interesting things, I think, with -- with cursors at different times, but -- and I'm sure you'll be asking about those, because where we've been on this before.
Q. But so -- so -- but just to sort of highlight what we might talk about, do you remember some of the more interesting things that you did with cursors?
A. Yeah. I -- well, we -- some of them involved -- you know, some of them involved hiding the cursor altogether and substituting a graphic for the cursor moving, so that the graphic moved as if it was a cursor.
And there was the game we did called Staying Alive, which -- where the cursor goes away, and it becomes a finger, you know, with a -- with a medical -- where a person is getting an EKG that measures their heart rate and stuff like that. That was fun.
There was another little game that involved was -- that involved a mouse and a cat trying to eat the mouse, where we changed the cursor into a cat's head. So that's the more interesting thing.
The more -- a more -- probably a better

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example -- and, again, this goes -- it's all been discussed before, but -- is where we did it in our bowling games, where -- where -- to signal that you were choosing a bowling ball and then picking up the bowling ball, we had different cursor changes to indicate that you had picked up and moved the bowling ball.

Q. Uh-huh, uh-huh. Did you have elements in your games or presentations that reacted to the location of the cursor or that did different things based on where the cursor was on the stage?

A. Yes.

Q. What kind of things did you do where you were reacting -- or what -- the code that you wrote reacts to the location of the cursor?

A. We would call that -- those events, the location of where -- the location of the mouse.

Q. Uh-huh.

A. Something reacts to it.

Q. Location of the mouse.

A. Is most often done with -- within Director what was called a mouse over. You know, there were -- there were -- you know, there were a series of -- and they were called events.

They were a series of mouse events. And

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those were things such as if you -- if you just drew a square on the screen. And that square, you wanted to -- to make it some sort of a button or some sort of thing that reacts, when you took your mouse, you --

And -- and when a user took his mouse or her mouse and -- and did a -- and moved it into that square, that would be a mouse enter event.

And then there was a mouse over event, which means, oh, you check -- that's an event -- it is still over that square.

And then you would have a mouse leave event, you know, which would be the mouse cursor has just left being over that square.

And you would have a mouse down when they clicked, and a mouse up when they unclicked.

Q. Uh-huh.

A. You know, and -- and so there were a series of events. And when you would signal a mouse over, when there would be a mouse over of something that the programmer had defined as I want something to change, you could change and make -- you know, you could make a bowling ball roll.

You could make an arrow move back and forth. You could make a -- something spin underneath the cursor. And these are all -- what you're really

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trying to do is provide visual clues to the player or user -- player of the game or the user that -- that something special can be done there or that there's --

They should be looking there or, you know, this is -- this is all -- this is all good interactivity to -- to like give visual clues, so that the program they're looking at, the -- the multimedia they're looking at isn't dead.

Q. Do you -- did you ever have other elements other than the thing that appeared to be the cursor move on the stage in reaction to movement of the mouse?

A. Well, there were certainly -- I mean, the instance that I described with the finger and that -- and that game of -- of -- of cardiac -- you know, it was called Staying Alive, but that was certainly an instance where something moved in reaction to the cursor.

And, of course, you always have -- have things such as -- you know, in multimedia you often give users the ability to pick something up or put it down in a different location or to drag it over something and drop it.

And all of those are -- are mouse movements, where you can say, hey, when the mouse moves over

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this, when the user clicks on this, then have this graphic move with the mouse or, you know, have it change.

Q. And did you do little things like that in your multimedia --

A. Yes.

Q. -- presentations?

A. Yes.

Q. Was the capability to do that something that existed in Director and Shockwave in 1996?

A. Yes.

Q. Okay. And is that something that you wrote into code that you developed in 1996?

A. I wrote it into our code. Yes.

Q. Okay.

A. Uh-huh.

Q. Can I just ask you what a DIR file is?

A. A DIR file is the Macromedia Director authoring file. It is -- it is the file that -- just as -- if you were to use a program like PhotoShop, their native authoring file is a PSD file.

If you were to use Microsoft Word, their native authoring file is a .doc file, or nowadays .docx. Well, a .dir file was the equivalent, you know, for Macromedia Director. It was your -- it was

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what you wrote in, your authoring file.
Q. So -- yeah, so when you're building a presentation or a game, the DIR file is the file that you'd be assembling all of the elements of your game in?
A. It was the file that the developer used. A user never saw a DIR file.
Q. Right.
A. You know, a user saw an EXE file if it was an executable or a DCR file if it was in Shockwave. But they -- they never saw the DIR file, because they didn't have -- they didn't own a $700 copy of Macromedia Director.
Q. Oh, so the -- the DIR file is all of your --
A. It's all the -- yeah, it's all the ins and outs. You -- that's what we, as developers, protected from -- you know, didn't want to get out in the public, or people would steal our stuff.
Q. Yeah. Okay. So -- so I mentioned you were deposed -- or you had mentioned you were deposed back in 2014; is that correct?
A. Yes.
Q. Okay. And -- so do you recall when folks from my law firm reached out to you?
A. August.

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Q. In August of this year?
A. Yes.
Q. 2023?
A. (WITNESS NODS HEAD UP AND DOWN.)
Q. And you, after some conversations, provided us with some -- some of your files. Can you tell us what you did to -- to look up and try to find work of yours from that timeframe?
A. Okay.
Q. From 1996?
A. All right. Well, let me start by saying, I don't think, to the best of my recollection, that the previous attorneys in the 2014 case returned paperwork.
And there were -- and there were backup media. And I -- if they returned it to me, I don't remember they ever returning it to me. You know, I think it -- I don't know where it is. Maybe you guys can figure all of that.
So when -- when your law firm asked me to search for materials from back in the 1995, '6, '7 era, I looked in a lot of different places. And I have an office. It's in the same place it was for 20 some years, and that's where I work.
And I have two storage facilities. And I

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looked through one that I've had for years and one that I'm moving some stuff to that has some stuff.
And I went through all of those, looking for any -- any -- any similar backups of the files from that period. And I also at the time looked for my paperwork.
And I won't blame this on the other law firm from years ago, but -- because I have some recollections of simply going through old files, old customer files, and, oh, I'm never going to use this one again. I mean, we're talking 25 years.
And -- and I think somewhere between 2014, and, now, a lot of that just -- that -- that paperwork I just simply destroyed.
Q. Uh-huh.
A. But I did -- and I managed to find a few things that were pertinent to that period that were still there that I hadn't -- hadn't honestly found in 2014.
Q. I'm very happy about that. So -- but I'm going to hand you a couple of CDs that I believe we got from you.
A. Uh-huh.
MR. KELLEY: You can tell me if you recognize them. These are originals, Sandeep.

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So nothing to -- nothing to show you, but --
THE WITNESS: Okay.
BY MR. KELLEY:
Q. So the first one you're looking at right now is labeled, "Backup major work files 8/3/97," and it's a CD-ROM; correct?
A. Correct. Let me look and make sure the CD-ROM -- yes, it is.
Q. Okay. So is this one of the documents -- one of the objects, CD-ROMs, that you found when you were digging through and --
A. Yes.
Q. -- this year?
A. Yes, it is.
And you're going to ask me next, is it my handwriting. Yes, it is.
Q. Okay.
A. I -- I did all of the -- you know, we're a little bitty company, you know. I did all of the backups and things then.
Q. And so this came from one of your storage facilities?
A. That -- this actually came from a box in the very back of the rafters. I have rafters in my -- in my office that have a mix of business things, but also

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personal things. You know, a box of -- of my wife's baby -- baby clothes. A box of Africa photographs that were taken in, you know, 1994, et cetera, et cetera. Just -- but it was -- it was back in there --

Q. Uh-huh.

A. -- in -- in a box.

Q. Okay. And the second one I gave you is labeled, "Backup number one, Steve Dell," and then the date is, "11/11/99."

A. Again, it's my handwriting on both. And I -- from having written this so many years ago, I would assume that this was -- I made this backup in 1999.

Q. Okay. And this found -- you found this one where; similar place or --

A. I -- I -- yeah. I -- I sent you guys two boxes of things. This must have been in the box, you know, because this had a 1999 date on it, which was sort of after the period we were looking at. I didn't think this one was -- I didn't remark in my mind on it when I found it.

Q. Yeah.

A. But it's -- it was in -- in the materials I sent out to --

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Q. But it was in one of --

A. -- the folks in California.

(COURT REPORTER'S CLARIFICATION.)

MR. KELLEY: My mistake.

THE WITNESS: It was in one of the boxes I -- if you have it, it was in -- it must have been in one of the boxes I sent out there.

I didn't remark on this. I remarked over e-mail on this one, because this was very close to the date of all of the files. So I knew that this was --

BY MR. KELLEY:

Q. Right.

A. -- in the 1997 year, which seemed to be critical --

Q. Yeah.

A. -- to all of you.

Q. Yeah. Okay. But it -- I guess the question I was asking is: This was also from your storage?

A. Yes, yes. This would have been in the -- in the box that had various backups in it.

Q. You also sent us some jazz and zip drive --

A. Right, right, right.

Q. Yeah. I didn't bring those today --

A. Okay.

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Q. -- but those -- those also were in your storage facility?

A. Those -- those were also -- that was a storage medium. The Jaz drives, a company named Iomega that also made Zip drives back at the time.

The Jaz simply -- you know, back then being able to store two gigabytes on -- of data on a single medium was like, wow, you know. And so I -- I used those for backups too.

Those are -- those are less permanent than CD-ROMs in some ways, because Jaz can be -- you know, it was a read-write drive. You could overwrite. You could -- you could redo them.

Back -- back in that period CD-ROMs -- I forget when the rewritable ones came in, but -- but in general you thought about writing a CD-ROM as a write once sort of thing.

MR. SETH: Chris, before you go any further, can you -- I think this record is getting a little polluted. We -- we haven't marked any exhibits.

I don't know what these CD drives are that you're -- the CD-ROMs are that you're talking about. Are they -- do they have a Bates number? Are you giving them an exhibit number?

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MR. KELLEY: So these are the originals. You've -- we've given you copies of them, but -- but these are the original objects.

MR. SETH: I'm not -- I'm not --

MR. KELLEY: I'm not planning on marking them.

MR. SETH: That's not my objection. My objection -- I didn't say you didn't give me copies. I'm saying that this record doesn't reflect what those CDs are.

MR. KELLEY: No.

MR. SETH: No bates number or exhibit number. Can we take care of that?

MR. KELLEY: Yeah. No. I'm not going to mark them as exhibits, but --

All right.

MR. SETH: Do you have the Bates number for them?

MR. KELLEY: Well, they're -- they're physical objects. So there's no Bates number, but -- but you've been given copies of them.

MR. SETH: Were they identified by Bates number?

MR. KELLEY: I don't know how they were produced.

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No. They were not?
MS. LI: We made digital copies of every single file on these CDs and FTP'd them.
MR. KELLEY: Yeah. So they've been -- the files were FTP'd to you. I don't know that there were Bates numbers attached to them.
MR. SETH: How are we going to know which files we're -- which files we're talking about then?
MR. KELLEY: Well, we're not -- I'm done with those -- talking about those exhibits anyway. So it's -- I'm just really asking --
MR. SETH: Well, you questioned him about these exhibits. I'm entitled to know some identifier for which exhibits you -- you were talking about. That would be true if I was live there too.
MR. KELLEY: I understand. Well, I can get you the -- we can get you the history of how we got those documents to you, and then you'll know which ones --
MR. SETH: I'm not asking for a history of how you got the documents, Chris. I'm asking for a simple identifier --
MR. KELLEY: Yeah.

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MR. SETH: -- by Bates number or by exhibit number. That's all.
MR. KELLEY: Yeah. Well, I don't have a Bates number for you, Mr. Seth. And I'm not going to mark them as exhibits, because they're one-offs. They can't be duplicated.
So if there's any question about what's on the files he sent us, we can resolve that afterwards, but I'm not talking -- we're not going to use those any further as exhibits in the deposition. So I'd like to move on.
MR. SETH: I'm just going to object at the -- for the lack of identification, but continue, please.
MR. KELLEY: I will.
BY MR. KELLEY:
Q. All right. So I want to start by talking about -- well, actually, let me back up.
When you -- when you first got into the on-line -- the internet interactivity presentation business, what -- which -- what kind of things were you working on? What kind of presentations did you -- did you develop?
A. In the -- in the on-line business, which would have been at the beginning of 1996, as they say,

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December of 1995 and then into 1996, the on-line business, we had decided that -- I had decided, because I was the owner of the company that our future was going to be in -- not in doing like business sort of presentations or business multimedia, but, rather, was going to be in the area of games and entertainment.
And one of the primary ways -- and there was -- and the business, to a great extent, didn't really exist at that time. You could -- you know, I wasn't alone. A lot of smart people could see it coming, you know.
It wasn't an original thought on my part, but in early 1996 basically we were working to attract attention to Adveractive as a company, who could do the sort of multimedia.
And -- and the things that we did in early 1996 -- and I'd say that's from about February of '96 through the fall. We concentrated on making free -- free to the public giveaway multimedia that we called Shock-Baubles to do cool things that people had never seen done on the internet to attract attention to us to try to get in the game business, to try to create games for people, because that was the natural outgrowth we thought of of the sort of things we were

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posting and saying to the general public, you know, come put this on your web page.
You know, here is something we're not going to charge you for, but it's really cool. And it was cool. You know, you look at it today, and it looks clunky, you know. And the graphics look rough and all that sort of stuff.
But in 1996 it's like, wow, you know. People were like, cool. You can -- you can do that. And I could put it on my own page. And people were putting up their own pages back then and trying to put cool things on there.
Q. When it was cool, because before that web pages were just static; right?
A. Well, I mean, for most people before that they never saw a web page until 1996, you know. And then when they first saw them, most web pages were static with pictures.
Like, you know, this is my -- this is my -- you know, were -- were static text and pictures, but now all of a sudden you could have something that would be fun to do on a web page.
Q. So you developed many of these baubles?
A. Uh-huh.
Q. What did you do to -- you say that the

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purpose of them was to drum up business?
A. Was to attract attention. Right.
Q. How did you use the baubles to -- to attract attention or to try to get business?
A. We -- well, we built -- we built -- we built out the site, the Adveractive website. We -- we made sure that we were -- that we were listed by all of the search engines.
You know, back then Google was just like one of many search engines that you would list your -- your program with. I was very active in developer and multimedia forums in trying to publicize what we were doing to -- to others in the same business.
We would do links from their cool stuff over to -- to our, you know, Shock-Baubles. I actually invited other developers to contribute to the bauble, B-A-U-B-L-E, to the bauble library, which they did.
You know, I had five or six or seven other developers who did a few things here and a few things there, and we -- in return we would give their stuff away, and we would give users links to their pages to publicize ourselves.
And, you know, it was a very -- that early developer community was very sort of cooperative. You know, I wouldn't say altruistic. We all wanted to

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make a living at it, but -- but everybody was going, hey, you know, we were all sharing the coolest stuff.
Q. Uh-huh.
A. You know, the new stuff that everybody was doing we were sharing with one another and trying to tell the world about it at the same time.
Q. And did you see other people actually putting your baubles --
A. Oh, yes.
Q. -- on their web pages?
A. Oh, yes. Oh, yes. Yes, yes. And we had instructions on, here is how you do it. Here is the object. Embed -- here is the embed tag you have to write.
You know, put the -- put the DCR file, you know, next to your other files, to your JPEGs and whatever. And then put -- you know, when you can -- we gave them sample -- sample HTML pages. You know, use this sample HTML page to load the -- the DCR file, you know.
Q. Okay. And those sample HTML pages would have embed tags in them --
A. Exactly.
Q. -- so that they could --
A. Exactly. They could -- yup.

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Q. -- host the --
(COURT REPORTER'S CLARIFICATION.)
THE WITNESS: Okay. Sorry.
MR. KELLEY: Yeah. It's -- it's hard for her --
THE WITNESS: Yeah.
MR. KELLEY: -- if you and I are talking.
THE WITNESS: I feel like I'm in conversation sometimes here. I'm sorry. My apologies.
MR. KELLEY: We'll -- no. It's fine.
THE WITNESS: Can you do the question again?
MR. KELLEY: Yeah.
BY MR. KELLEY:
Q. So those sample HTML web pages would include embed tags that would allow the web page to -- to host the DCR file?
A. That's correct.
MR. SETH: Objection to form.
Q. Now, you mentioned that you made sure that the Adveractive website was listed with -- with the web search engines. What did you have to do to do that?

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A. Back then there was a -- there was literally -- and I forget where -- where it was on the internet, but there was a -- there were places where it was like a list of these are the top 20 web search engines with a link to each.
And you would click on the link to this one, and there -- I remember at least one or -- one major name. AltaVista was a much -- much more prevalent web search engine than Google back in that 1996, if Google even existed.
Google may not have come along until '97, but -- but you would go to each one of those pages, and you would put in the web address of your pages. And you would put in a brief description, you know.
And, of course, yahoo! was very important at that time. And the difference being that -- whereas, AltaVista and most of the others were simply search engines that had -- that basically indexed all of these pages, the yahoo! actually was a -- a curated web --
I don't want to call them a search engine, because yahoo! basically -- they listed the things that they thought were cool on the web. So getting -- getting on to yahoo! seemed more important back then than getting on to the just regular search engines,

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because yahoo! said, gee, you ought to go there, because this is really cool stuff.

Q. Uh-huh. And did you get your website on to yahoo!?

A. Yeah. It was in -- it was in some of yahoo!'s lists.

Q. Uh-huh. Now, you mentioned also that there were -- you were in -- you were linked to other developers through, I guess, like a chain of developer websites, or how did that work?

A. We were linked to -- we were linked to other developers through discussion forums.

Q. Okay.

A. You know, through lists. They were LISTSERVs, is what they were called. Where we basically -- there would be threads of -- of -- of conversation going on.

And every morning I would go and read, you know, overnight the 50 or 60 posts from the previous day and contribute to them or answer questions about them or say, this is what I'm doing over here.

So this -- the -- the -- the developer community for Director, we commun -- communicated very much through those -- those LISTSERVs and --

Q. And you mentioned that you were aware that

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there was uptake, that people were using your baubles --

A. Uh-huh.

Q. -- on their websites?

A. Uh-huh.

Q. How did you -- how did you discover that, or did you intentionally try to keep track of that?

A. They would send me links, you know. Sometimes they would send me questions, I can't get this to work. And they would have the file in the wrong place, you know, and all that.

So -- so I would answer questions. And then we asked people. We said, if you use this, you know, drop us a line and tell us where you're using it. So --

Q. Uh-huh.

A. So -- and that -- that -- that worked too. So I saw many places where it was being used.

Q. And, now, when you -- when they put your bauble on their website, is there some attribution to you?

A. Yes. Very often. We asked for attribution. We asked for a link, you know, underneath the website, which was how we fed traffic back to Adveractive.

Q. Uh-huh. Did you keep track of your website

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traffic or not --

A. Not closely.

Q. Not closely.

A. Not closely. I mean, I knew it grew. You know, back then you actually paid your -- your server company, depending on the bandwidth, you know, how many megabytes per month were downloaded, you know.

And I know that our traffic continued to grow and grow, but that was the natural evolution of a lot of stuff on the internet back at that time.

Q. Uh-huh. So, now, at some point you got actual increase from people who wanted to give you money to -- for you to do work for them?

A. Yes.

Q. So what was the first of those? When did it happen?

A. Well, the very first of those -- the very first of those was Walt Disney.

Q. Uh-huh.

A. And that was somewhere in the late summer of 1996. Probably July, August. And Walt -- and the Disney company was exploring the use of multimedia and how to build out their own web pages.

And they paid me or us I think the princely sum of -- it might have been $1,000. It might have

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been 2,000, but it was -- it was -- it was small potatoes for them. But paid us to build a prototype piece of interactivity that was more or less a navigation setup for them.

And I do remember -- and it's been 25 years. So -- and nobody can get so upset about this, but it was -- it was -- Annette Funicello had passed away, and this was called the Funicello Multimedia Development Program.

And I was told not to mention that -- that name to anybody at the time, you know, but -- but -- so basically what ended up -- quick -- quick answer. And I find it interesting, but what ended up happening was they paid us to build the prototype.

And then the next thing I know -- knew, and I could hear this through the Director thing, they hired a bunch of people --

Q. Yeah.

A. -- to go to work for them down in Anaheim to learn Director and to do it all themselves. And they basically then, you know -- and they built a lot of their early stuff in the '97, '98, '99 era, was all done in Shockwave, but it was with in-house people. And I never got another -- another sniff from them for any more work.

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Q. Did you ever hear from them how they learned about you?
A. I think it was the baubles. I -- my impression. I -- it was a phone call out of the blue. Some -- somebody at Disney. And, you know, I think it was through the things we had done.
Q. Oh, it must have been pretty exciting, though, that phone call?
A. Yeah. It was heady stuff, you know, when you'd gone six months with no income, you know. From Disney, it was like, oh, it could be our big breakthrough. Well, it wasn't.
Q. No.
A. But that was my first client.
Q. All right. So who was your next client?
A. My next client, we had -- through the course of that year we had developed a -- not just the baubles, but a series of small -- and I say, "small," but they were very nice -- nice games for the time.
We did one game, which was a Halloween haunted carnival game. And we had developed a -- a bowling game that was -- at that time it was the best bowling game on the web.
And -- and we had put that up on our site for people to play for free. I don't think at that

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point we had offered to give it to anybody, but we put it up to demonstrate.
And in the fall it would have been around the end -- it would have been -- well, let's see. Things broke in November, slash, December of 1996.
And I have a hard time remembering whether it was AMF Bowling that was the first or if it was Coca-Cola Japan that was the first, because they both -- they both came in --
One -- one, which was AMF Bowling, they saw the bowling game. We'd like -- we'd like something -- we liked that on our website with a little bit of our branding for AMF on it.
And they were not willing to pay a whole lot of money for it, but -- but they wanted to have a bowling game on their website. And they were -- it was -- it was great to have them as a client, but they were not meaningful in the long term.
Whereas, Coca-Cola Japan really was meaningful in the long term and established a four, five year relationship with Coca-Cola, where we developed, you know, 30 plus games for them, you know, over five years from -- from them through about 2001. And -- and they really became a good client.
Q. So AMF Bowling or Coca-Cola Japan, you're

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not first -- you're not sure which first contacted you, but they were all --
A. It was --
Q. -- somewhere --
(COURT REPORTER'S CLARIFICATION.)
BY MR. KELLEY:
Q. Somewhere in the timeframe of November, December?
A. Yes.
Q. Okay. And, AMF Bowling, you said they didn't pay you much, but they did pay you something; right?
A. Yes.
Q. Okay. Do you remember the amount?
A. I think it was $1,000 for a year's use of the -- of the bowling game.
Q. So they didn't buy it? They just --
A. No.
Q. -- licensed it?
A. They licensed it.
Q. And did you then go ahead and put their branding on this existing bowling game that you had?
A. Yes.
Q. And then you delivered that to them?
A. We sent them a DCR and told them what the

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HTML embed tag should look like and gave them instructions on how to put it on their website. Yes.
Q. Okay. And how did Coca-Cola Japan learn about Adveractive?
A. Again, it was the -- it was through the baubles. Through the things on our website. You know, we had that -- we had a carnival game. We had the -- we had a couple of other -- other relatively simple games, but carnival game, bowling game.
They had a consultant. And they were all in English -- it's funny. They were an English speaking company, called InfoPlus. And they were the advertising agency for Coca-Cola Japan, who had been hired to build out the internet site.
And they had hired a -- this. And they -- they told me his name, and I -- I never met him or talked to him, but this supposed -- this guru of Japanese games, you know, who had consulted with Nintendo and Sega.
You know, he was like -- and they spoke of this man in reverence. And this man had told them that in order to attract Japanese people to the website that they should develop a series of games based on their Coca-Cola products.
And they -- and this man had somehow found

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me in North Carolina. And out of the blue approached me and said, would I like to quote them a series of games. And -- and, as I say, it was the beginning of -- of a great relationship.

Q. Did they pay you like per game, or how did that work? Were you charging them hourly?

A. No. It was -- it was a fixed price. They said, we'd like ten jigsaw games. We'd like ten sliding block games. We'd like a pair of -- they -- they were called Yabusame, but they were Samurai warrior style.

Very simple Samurai warrior style games. And they had -- and they would -- they would give -- tell me basically what they wanted, and I would -- I would quote a fixed price for it.

Q. And these were all DCR games, Shockwave games?

A. They were all Shockwave games. Yes, sir.

Q. And you wrote the code for them and did the design?

A. Yes, sir. I -- I had -- I had a wonderful graphic artist at the time, who did a lot of the visual design, but I was the one who -- who like figured out the interface and how things should work and where things should be relatively positioned and

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how the games should look.

Q. Uh-huh. Do you remember when you first delivered products to Coca-Cola Japan?

A. Would have been in the first three months of 2000 and -- 2000. Of 1997.

Q. Yeah. Okay. And how about the AMF game, do you remember when you first delivered that?

A. I think it -- it -- because the game had actually been completed and was -- really the game was done. We just put their graphics on it. It would have been January -- I believe January of 1997.

Q. All right. What was your next customer after Coca-Cola?

A. After AMF and Coca-Cola, the next customer was Brunswick Bowling through their advertising agency in Oklahoma. And their advertising agency was named Ackerman McQueen.

Q. And what did they want and what did you do for them?

A. They had seen our bowling game also and liked it. They did not want it -- they did not want it -- they wanted a good bowling game.

They did not want a bowling game that looked like the one we had already done. And when they found out that AMF was using like the one that looked like

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the one we had done, they wanted something different. They wanted something better --

Q. Uh-huh.

A. -- you know. And they were willing to pay more for it.

Q. Uh-huh. And do you remember approximately when they managed to get in touch with you?

A. I think it would have been January.

Q. Okay.

A. And it might have been February. January, February of -- of 1997.

Q. And so you -- did you deliver this game to them?

A. Yes. We -- we did. They had -- they had products then that -- well, they had -- they had bowling ball products that they wanted to have featured in the game.

And they also -- this was the era when -- when -- when Brunswick and AMF both, not only were the names in bowling, but they had their own chains of bowling alleys.

And back then one of the cool things at night was the -- was cosmic bowling. And cosmic bowling by Brunswick was when they would turn off the overhead lights and turn on black lights. And they

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would have the black light fluorescent paint all over the bowling alleys.

And -- I don't know. Thursday night was cosmic bowling night, you know. So -- and -- and people -- you know, your shirt -- you know, certain things fluoresce. Anyway, it was fun. And they wanted their game to simulate some of that.

So I remember there was a switch within the game that you could tap to go cosmic with it, where we would make the colors within the game all go kind of fluorescenty wild. It was -- it was really interesting. It was fun.

Q. And do you remember how much they paid you?

A. Not much. Not enough. I don't know. 3,000, 4,000 bucks. Something like that.

Q. You were hungry for work, so you took it, huh?

A. Absolutely. Absolutely. Absolutely.

MR. KELLEY: All right. You know, we're going to get into code. So why don't we take a break, and then we'll --

THE WITNESS: Okay.

MR. KELLEY: All right.

THE VIDEOGRAPHER: Off the record at 10:44 a.m.

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(RECESS FROM 10:44 A.M. TO 10:53 A.M.)
THE VIDEOGRAPHER: On the record at 10:53 a.m.
MR. KELLEY: All right. So I'm going to introduce an exhibit.
And, Sandeep, you'll find this under the Hum1 folder as .dir entry.bmp. I want to mark this as Exhibit 1.
MR. SETH: I'm sorry, Chris. Can you repeat that? This is -- what I have is -- is what Kay sent in the Zip drive -- or -- I'm sorry. In my Dropbox file.
MR. KELLEY: Yup. Should be.
MS. LI: So .dir captures is the Zip folder. Hum1 is the sub folder.
MR. KELLEY: Did you hear that, Sandeep?
MR. SETH: Yeah. Can you -- Kay, can you just tell me what it is in the files you sent me?
MS. LI: Yeah. .dir captures is the Zip folder.
MR. SETH: No. I meant in the -- in the Dropbox.
MS. LI: It's not in the Dropbox. It's

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in the e-mail.
MR. SETH: Oh, it's not in the Dropbox. Okay. Just one second then. I have to go to the e-mail.
MR. KELLEY: Is it possible to put them in the Dropbox, isn't it?
MS. LI: Yes, but I sent them over e-mail.
MR. KELLEY: Okay.
MS. LI: So he has everything.
MR. KELLEY: All right. That's fine. I don't --
MR. SETH: Well, I mean, I had asked that the Zip files be in the uncompressed -- in the -- the folder. Now I've got to uncompress them.
MR. KELLEY: Let's go off the record, and you can uncompress them.
MR. SETH: Okay. Thank you.
THE VIDEOGRAPHER: Off the record at 10:55 a.m.
(RECESS FROM 10:55 A.M. TO 10:57 A.M.)
(DEPOSITION EXHIBIT 1 WAS MARKED FOR IDENTIFICATION.)
THE VIDEOGRAPHER: On the record at

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10:57 a.m.
MR. KELLEY: All right. So we've marked as an exhibit a screen capture that is in the folder.
For you, Sandeep, is Hum -- in the Hum1 folder. It's titled .dir entry.bmp.
BY MR. KELLEY:
Q. Mr. Bullock, I will represent to you that this is part of the directory file of one of the disks that you gave us. Do you -- do you see the display of file names there that looks like part of a directory printout?
A. Yes, I do.
Q. And do you recognize those file names?
A. Yes.
Q. Okay. So, now, at the top of this directory thing there's something that says, "F drive, drive G, forShok baubles." Do you remember giving us a directory from a drive G?
A. Yes.
Q. And then what are the subdirectories, forShok and baubles? Are those -- go ahead.
A. ForShok is just shorthand for ForShockWave. Okay. And for the -- you know, and baubles would be what we call our Shock-Baubles, and -- yes. That's

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it.
Q. And so in this directory there's a bunch of files, and some are -- have extensions .dir. Some have extensions dot -- well, there's some DCR files as well. And then there's some other -- some Zip files --
A. Uh-huh.
Q. -- et cetera. Those -- are these files names all various baubles that you made?
A. Yes. There are -- we typically -- periodically if I were working on a -- you know, take the -- take the Heart. There are several files here named Heart.
If I were working, I would begin by working on a file named Heart or Heart1, you know. And then somewhere along the line I would say, gee, I should really have a backup of that, in case I screw this up or in case Director, which could sometimes eat a file would eat the file, I would make a .bak file.
And it would basically be the same file. It would just have a different extension to it. And the .bak was my backup for it.
At some point in there also when I would -- might make a major change to it or a major improvement to it, it might move from being Heart1 to being

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Heart2, just to distinguish it as being a separate version from the original file Heart1. Heart2 has some enhancement or some change. So it's not -- no longer identical to Heart1.

Q. Okay. So I want to ask you some questions about the hummingbird bauble. Do you remember that one?

A. Yes.

Q. So what did -- what was the hummingbird bauble all about? What would the user see when they'd put that up on their web page?

A. The hummingbird bauble was probably one of our most attractive visually baubles. And it was a series of orchid flowers standing up with their little cones pointing here.

And we programmed little birds to -- little hummingbird bodies, with wings that would be -- would be there, but sort of were semitransparent, as if they were going, you know, like 300 beats per -- per minute.

Q. Uh-huh.

A. And we randomized where these birds would move, but eventually they would move, and they would find the flowers and stick their little beak in there, as if they were getting nectar from it.

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And it had sort of a sunrise or a sunset sort of coloring to the background behind it, so that it looked like -- you know, it was just a very pretty animation.

It was -- it was long and not very tall. You know, it was the sort of thing you would put at the top of a page. And a number of people did use this at the top of their web pages. Again, it was one of the things we gave away for free.

Q. Now, in this exhibit there's some dates attached to the files, as is customary with the directory printout?

A. Uh-huh.

Q. And the date for the Hummingbird1.dir file looks like it's July 12th, 1996. Do you see that?

A. Yes, I do.

Q. Is that consistent with what you recall when you wrote the hummingbird script?

A. This was the -- the period for creating virtually all of these baubles was from early in '96 through -- through late summer or early fall of '96.

So I couldn't -- my recollection isn't strong enough to tell you which one was done first and which one was done second, because we were doing a lot of these at similar times, but this would have been --

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this -- this date would be within the period in which we were creating these baubles.

MR. KELLEY: Okay. Let me mark this as Exhibit Number 2.

(DISCUSSION HELD OFF THE RECORD.)

(DEPOSITION EXHIBIT 2 WAS MARKED FOR IDENTIFICATION.)

MR. KELLEY: Sandeep, this is the file cast .bmp.

BY MR. KELLEY:

Q. So we've marked as Exhibit 2 another printout from that file that we just looked at earlier on the directory, but now it's launched in Director.

So what -- can you describe what we're looking at here?

A. We are looking at the authoring, the Director authoring file. The DIR file as -- as Macromedia Director would open it up.

And on the right-hand side you have the cast. And the cast contains the graphics, like those little bitty hummingbird bodies, at the top and the flowers. Those were all graphics.

And also has the programming language. And you can see those in a couple of the -- of the little squares that have words inside of them. It contains

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the background graphic, which would be like number 23.

See the cast members are all numbered. And where there isn't a number, it's where I would have given them a custom name. Like flower R would be flower facing right. Flower L would be flower top facing left, you know, sort of thing. So that is the cast.

The little square -- part of it is covered up, but a little square in the middle there, where they're actually -- you know, you can see a little -- a couple of little plants and grass at the bottom. That is the stage.

Remember, the metaphor, the stage and the cast and the score. This particular screenshot doesn't show the score, which would be a key component, but -- I mean, that's just -- that's just the time -- that would control the timing of the animation, but this has two of the major components, the cast and the stage.

Q. Uh-huh. Now -- so, now, how -- was the user able to interact with the hummingbirds .dcr?

A. My recollection is that the -- the birds flew around.

Q. Uh-huh.

A. But that the flowers could be repositioned.

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Could be dragged around with the mouse that you could click on -- on the flowers, and you could move them from place to place.

And that the -- that the birds would generally -- would then find the flowers and dip their little beaks in there and continue flying around. And so -- so that was the inter -- I believe that was the interactive portion of this, that a user could do and change. Made it cooler than just a static --

Q. Uh-huh.

A. -- photo.

Q. Uh-huh. So -- so if the user did a mouse click over one of the flowers --

A. Uh-huh.

Q. -- then the flower would move with the mouse?

A. As the mouse -- you could click and -- and drag it. Uh-huh.

Q. Okay. And, now, how did this serve a promotional purpose for you?

A. Oh, it would -- it was a cool animation. It -- you know, it wasn't -- it wasn't much of a game, in terms of a game, but it was a very pretty animation.

I'm trying to remember -- and I have -- and

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I'm having trouble remembering if there was any music or anything. I don't see any music or anything in the score. So I think -- I guess it was silent.

But, you know, it was -- it was basically for -- we gave it away for people to put on websites, and people did, you know. And people would come and think it was, in 1996 terms, a very cool sort of thing to have on a web page.

Q. And would there be attribution to Adveractive?

A. We would ask for that. Yes.

Q. Okay. On your website presumably there was attribution for --

A. Oh, yes.

Q. -- Adveractive?

A. Yes, yes, yes. It was very clear that -- on our website that this was our animation.

Q. Okay.

A. And we claimed it. Uh-huh.

MR. KELLEY: All right. I'm going to mark this as 3.

(DEPOSITION EXHIBIT 3 WAS MARKED FOR IDENTIFICATION.)

MR. KELLEY: So, Sandeep, this is Script 20.txt.

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BY MR. KELLEY:

Q. And I will represent to you that this is the Lingo script that you get if you select the 20 cast member. Does this look familiar to you, Mr. Bullock?

A. Yes.

Q. Now, what is this?

A. This is the main in -- in the programming language in -- in Macromedia Director. It was called Lingo, but when you wrote Lingo code, you -- they called them scripts.

Again, you know, we're into the whole film metaphor, you know. Cast and stages, and this is your script. This is your script for your production. And this was a mainframe script that controlled the action of -- of each frame, you know, as the movie was running.

Q. Okay. And there's line 21 through 29.

A. Uh-huh.

Q. There's a section called, "On mouse down," and it goes -- there's some code, and then it ends on line 29. Do you -- can you take a look at that and tell me what's going on there?

A. What is -- what is going on there is -- and I'll do it line by line. Is -- on mouse down means the user has clicked his mouse.

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And the next line, "Put the clickOn into CSPRITE." CSPRITE is a variable. And in this case CSPRITE, I used to capitalize my variables, which isn't really very standard, but that's what I did.

And CSPRITE would be a frame channel -- or a sprite number, rather, a sprite number. And that's -- so I put the number into the variable CSPRITE.

And if CSPRITE was greater than 15 and CSPRITE was less than 28 -- and those were basically -- my recollection is those were the sprite numbers of the flowers.

So if -- if the flower -- if you clicked on a flower, if CSPRITE was one of the flower sprites, you know, set this global, the flower -- what number flower was clicked to the number of the sprite.

So gFlowerClicked equal CSPRITE. Let's see. Set gFlowerList equals 16, plus, plus -- I'm trying to figure out line 25.

Q. Uh-huh. It's been awhile.

MR. SETH: Chris, I'm sorry. Could you repeat which file this is?

MR. KELLEY: Script 20.txt.

MR. SETH: In the -- which directory?

MR. KELLEY: Same directory. The Hum1 directory.

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MR. SETH: Okay.
THE WITNESS: All right. The gFlowerList, I'm keeping -- I'm creating a list of flowers there. And I'm changing it, depending on -- on which sprite was clicked.
And I'm not in the long run sure exactly what I was doing with the flower list, just from this little snippet.
BY MR. KELLEY:
Q. Uh-huh.
A. So I'm going to -- that would be line 25. I'm just modifying this list of all of the flowers.
But in line 26 I'm creating a horizontal offset and a vertical offset relative to what the mouse's location is. The mouseH and the mouseV.
The mouse horizontal location and the mouse vertical location. So I'm setting these two offsets there, so that -- so that I know generally how far or how far away from the center of the -- of the -- of the flower the mouse was clicked.
Q. Uh-huh. And then on lines -- excuse me. On lines 35 through 44 there's a function called MoveFlower --
A. Right.
Q. -- where you're using those offsets;

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correct?
A. Right, right.
Q. And so what's happening in those lines?
And, yeah, you can summarize. You don't --
A. Oh.
Q. -- need to go through line by line.
A. Oh, okay. Yeah. I -- I now understand the FlowerList. The FlowerList -- if you actually look back in the previous exhibit, the FlowerList was -- was each flower had the top of the flower, and then the body of the flower and maybe a couple of leaves coming off of the flower.
And you wanted to move them all together. So it looked like a single plant, you know, rather than moving just the top of the flower.
So on MoveFlower, the line 35, when you click -- once -- you had clicked up above on mouseDown. And now when you move the mouse after you had moused down on it, and you move the mouse, basically the entire flower would move with the mouse.
And that was repeat with i in gFlowerList. That would move all of the sprites together.
And the, "if inside of point," that was if you were inside of the rectangle of the whole animation, then it would basically move the flower as

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you moved the mouse.
Q. And it's determining the location of the flower as an offset from the mouse horizontal and vertical --
A. Yes, exactly.
Q. -- locations?
A. That's true.
MR. KELLEY: Okay. All right. Let's mark this as 4; correct?
(DEPOSITION EXHIBIT 4 WAS MARKED FOR IDENTIFICATION.)
MR. SETH: Chris, what is this?
MR. KELLEY: She's -- I -- I will give it to you as soon as she can start taking down the transcript. So that's why I was waiting.
It's, "Script 22.txt."
MR. SETH: Got you.
BY MR. KELLEY:
Q. All right. Do you recognize this code?
A. Yes.
Q. And is this also Lingo code from the hummingbird game?
A. Yes, it is.
Q. All right. So -- and this says, "Parent Bird Script," in the first line?

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A. Uh-huh.
Q. What is -- what does that indicate about this section of code?
A. That indicates that this is the -- this is the main body of programming language, which is controlling the behavior of the bird.
Q. Okay. So now I want to talk about what starts on line 25, "On MoveBird me."
A. Uh-huh.
Q. Do you see that?
A. Yes, I do.
Q. So, now, what is -- and, once again, this is a long section of code. So I'm not asking you to go line by line, but do you remember generally what MoveBird does?
A. Oh, MoveBird -- let me turn the -- turn over to the -- of course, this is a printout. Let me turn over to the -- the third page. The second page, third page.
All right. MoveBird basically -- basically makes the bird fly around the screen.
Q. All right. And one of the features of the birds is that they can be attached to or associated with a flower for a period of time; right?
A. That's correct.

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Q. And that is --
MR. SETH: Object to form.
Q. Where do you -- how do you know that that's the case in this code?
A. I'm sorry. Could you repeat the question?
Q. Yeah. One of the things that when you look at the animation, the birds are flying around --
A. Yes.
Q. -- you mentioned?
A. Yes.
Q. And they can -- they can concentrate on a particular flower for some period of time?
A. Yes.
Q. Do you see the variable -- well, it appears in a couple of places, but my flower flag in this routine?
A. Yes.
Q. Do you remember what that variable does?
A. I'm looking for the end of the else. Yes. MyFlowerFlag is a variable, which means that the mouse -- the mouse. It means that the bird isn't presently like attaching itself, like hovering right around a particular flower.
And a FlowerFlag equals zero, zero and one. One is true. Zero is false. So zero is another word

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for false.
If -- if my FlowerFlag equals zero, it means that the bird isn't hovering around a particular flower at that point.
Q. But if -- but if it's not zero, it indicates that the bird is hovering around a flower?
A. Yes. And there's a -- on the next page -- or I guess it's -- you're looking at a file, but on line 64 is where the else comes in, where FlowerFlag is not zero, and else is something other than zero.
And it's -- that's where it's saying, if my FlowerFlag is greater than 25, do this. If -- if -- you know -- anyway, if my flag -- you know, change the wings. Is it hovering? The wing casts that make the little bird look like he's flying.
MR. SETH: I'm going to make a major objection to form.
And, Chris, I'm just going to ask you to please -- ask him any questions you want, but, please, don't lead.
MR. KELLEY: I don't --
BY MR. KELLEY:
Q. So the -- do you see there's several places in this code where there's -- where it's setting the variable, set myHoriz and set myVert?

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A. Yeah. My horizontal -- yes. Those terms, myHoriz, myVert, set myHoriz -- my horizontal and my vertical. That's my horizontal location and my vertical location.
Q. And they're the horizontal and vertical location of --
A. The bird.
Q. Okay. So, now, if -- if the bird has myFlowerFlag set to be true, so the --
A. Uh-huh.
Q. -- bird is near a flower --
A. Uh-huh.
Q. -- is the -- how does that influence or impact how the code sets myHoriz or myVert?
MR. SETH: Objection to form again and foundation.
THE WITNESS: It would -- what it would do is it would -- when it's near a flower, and FlowerFlag is greater than 25, it's basically telling the bird, stay close to this flower.
BY MR. KELLEY:
Q. Uh-huh.
A. And the idea of this block of code is that if you happen to click -- if a user happened to click and drag a flower, and there was a bird sort of

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hovering around, attached to that flower, the bird would follow it across the screen, you know. It isn't like you would pull it away.
So -- so it -- it implied like -- it implied that the birds were intelligent. They could find these flowers. And then once they were sucking down the nectar, even as the flower moved around, the bird could -- could track the flower, its location.
Q. So if the user is dragging the flower, the flower is going to move with the mouse?
A. Yes.
Q. And the bird -- if the bird is associated with the flower, the bird is also going to follow the mouse?
A. The bird is going to follow the mouse, but then randomly the bird might lose interest in the flower as well.
I mean, it didn't always track around, because what would happen -- if you did nothing, if you clicked on nothing in there, the little birds would fly around.
And then they'd get close enough to sense they're closest to a flower. And then they would go and stick their beak in and attach there. And they'd do it for a couple of seconds.

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And then randomly, maybe two seconds, maybe sometimes four seconds, it would say, hey, I'm going to go find another flower, and they'd start flying off again. So it really was a very simple little animation, but it really had -- it had enough randomness in it that it didn't repeat.

Q. So let me ask you in particular about the lines 69 and 70, where the code is setting myHoriz and myVert. Do you see that?

A. Uh-huh.

Q. And it's setting them to something called the locH of sprite myFlowerFlag minus 32?

A. Uh-huh.

Q. Plus a random function?

A. Right.

Q. So, now, what is the locH of sprite myFlowerFlag?

A. Sprite myFlowerFlag is -- is like the flower -- or is the key, probably the head of the flower, I believe. And -- so the locH is the horizontal location of the head of the flower.

And the -- the vertical -- the locV is the vertical location of the head of the flower.

Q. And then you're subtracting some offset, 32?

A. Yes.

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Q. And then you're adding random four?

A. Right.

Q. And what does the random four do?

A. The random four sort of makes the little hummingbird move like -- like four pixels one way or the other. You know, sometimes it'll be -- and each time this line of code runs -- and it runs once per frame, you know.

And you're -- and the whole animation is running at, say, 30 frames per second. So -- so every time a new frame comes, that -- instead of the -- instead of the -- the bird just kind of either moving super smoothly, there would be a little bit of shimmy shake to the bird.

And it would -- it would make it seem more realistic to have these random four and random -- the vertical would go up and down by as many as five pixels, and the -- and the horizontal would go left to right by as many as four pixels.

Q. So he's kind of hovering around the --

A. He's kind of hovering around. His little wings --

(COURT REPORTER'S CLARIFICATION.)

THE WITNESS: Sorry.

BY MR. KELLEY:

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Q. He's hovering around the location of the flower?

A. He's hovering around the location of the flower. Yes, sir.

Q. And the flower may, if it's fixed, that's fixed, but if I'm dragging it, that'll change as well?

A. That's true.

MR. KELLEY: All right. Let me mark Number 5.

(DEPOSITION EXHIBIT 5 WAS MARKED FOR IDENTIFICATION.)

MR. KELLEY: Sandeep, this is Hum1.htm.

BY MR. KELLEY:

Q. So this is some HTML code; correct?

A. Yes.

Q. And do you recognize this code?

A. Yes.

Q. What is it?

A. This would have been the HTML code for the page that displayed the hummingbird.dcr file, and would have displayed it within an embed tag, which is the one that you see beginning on line seven, embed SRC.

And that is where the hummingbird animation or DCR file would have appeared with a width of 592

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pixels and a height of 132.

And then below this would have been our instructions to the users -- or to the viewers of the page, saying -- you know, telling them how to, you know, maybe download it by clicking here. It's free of charge. Place it on your page. Those sort of instructions to anybody coming to that page.

Q. All right. And on line 19 you have some text that will appear on your web page; correct?

A. That's correct.

Q. And it says, "If you do use it, we would appreciate your dropping us the page's URL, so we can come visiting to see your [sic] work."

A. Uh-huh.

Q. "Attribution to Adveractive and/or linking to our site is not necessary. Although, it is always deeply appreciated;" right?

A. Yes.

Q. Okay. And that was --

MR. SETH: Chris, just one -- pardon my -- my interruption. Before your next question, I am not seeing this file that you're referring to. Did you say it's in the Hum1?

MR. KELLEY: Hum1.htm.

MR. SETH: Well, is this in the

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direct --
Can we go off the record for just a second, please?
MR. KELLEY: Yeah. We can go off the record.
THE VIDEOGRAPHER: Off the record at 11:25 a.m.
(RECESS FROM 11:25 A.M. TO 11:36 A.M.)
THE VIDEOGRAPHER: On the record at 11:36 a.m.
MR. KELLEY: All right. So we're looking at Exhibit 5, the Hum1.htm file.
BY MR. KELLEY:
Q. Now, you mentioned that there's an embed statement up in line seven. The tag begins, "Embed;" right?
A. Correct.
Q. Okay. And then you were talking -- and we were talking about line 19, where there's this text that does the attribution?
A. That's correct.
Q. Okay. Now, you wrote this HTML; correct?
A. Correct.
Q. And this was on your website?
A. Yes, it was.

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Q. Now, how did -- you had a bunch of sub pages, I take it, off your main page?
A. Yes.
Q. So there was a main baubles page, and then the different individual baubles had their own HTML pages?
A. Yes.
Q. Okay. And so this is the HTML page, am I correct, for the hummingbird bauble?
A. That's correct.
Q. Okay. And this is an example, I guess, of an HTML page that has embedded .dcr code and animation in it; is that correct?
A. That's correct.
Q. All right. And do you remember the approximate timeframe you put up this web page?
A. Summer of 1996.
MR. KELLEY: All right. You can set that aside.
Sandeep, we're moving to the Brunswick directory, and I'm going to be marking as Exhibit Number 6 the file directory .bmp file.
MR. SETH: Brunswick -- this is not -- I don't believe this is in the -- oh, okay. Yeah, it is. Uh-huh.

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I'm sorry. Which one?
MR. KELLEY: The file directory .bmp.
(DEPOSITION EXHIBIT 6 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. So, Mr. Bullock, I will represent to you, this is the directory of one of the subdirectories on the CD-ROM that you -- one of the CD-ROMs that you gave us.
A. Yes.
Q. Do you recognize the contents of this directory?
A. Yes, I do.
Q. What are these files?
A. These files would have related to a Brunswick bowling game, a game which we made for the Brunswick company.
Q. Uh-huh. And there's a -- some dot -- there's br_bowl.dir?
A. Uh-huh.
Q. And then there's also a br_bowl.dcr?
A. Right.
Q. And, I take it, that these are the Director authoring file and then the Shockwave file for the -- one of the versions of the Brunswick bowling game; is

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that correct?
A. That is correct.
MR. SETH: Objection to form.
Go ahead.
BY MR. KELLEY:
Q. And then there's a br under --
MR. SETH: One second. One second.
Mr. Bullock, if -- if you -- if you would, just give a second -- a second before you respond, because there's times that I'm just obligated to object to a particular question, and I'd just appreciate a second to make that objection.
THE WITNESS: Certainly.
MR. SETH: If that would be okay with you.
THE WITNESS: Certainly.
MR. SETH: Thank you.
BY MR. KELLEY:
Q. And then there's a couple of files with the names br_bowl2. Do you see those?
A. Yes, sir.
Q. And there's a .dir and a .dcr version of those; correct?
A. Correct.

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Q. And what are -- what are those?
A. Those are -- the authoring file would be the DIR file, and the Shockwave file would be the DCR file.
Q. And these files that we've been talking about, the br_bowl, and the br_bowl2 files, they have dates in March of 1997 here; is that correct?
A. Yes, sir.
Q. Is that consistent with when you recall writing the Brunswick bowling game?
A. Yes.
Q. And is that about the time when you finalized it or how -- how does that stack up?
A. Yes. It stacks up with when we finalized it, and -- and -- and the game would have gone public.
Q. Okay. And delivered it to Brunswick?
A. Yes, sir.
Q. Do you remember seeing it on Brunswick -- Brunswick -- do you remember seeing your game on Brunswick -- Brunswick's website?
A. Yes, I do.
Q. Okay. And do you remember when it first appeared on Brunswick's website?
A. Not the exact date. It -- I know that -- or I know. I'm certain that we built the game somewhere

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right around the end of March or beginning of April of -- of that year, 1997, and that they were in a hurry to make the game public and to get it on their website. And I -- I'm thinking that I probably first saw it on their website in April.
Q. Okay. When you say you're thinking, was it -- you know, how confident are you about that?
A. Very confident. There -- there was -- there was -- as I say, they were in a hurry. Their advertising firm, Ackerman McQueen, was in a hurry to get these files.
This was -- they pushed to have us complete this game in a very short period of time. It was a matter of weeks. It was three, four weeks, something like that.
It was like, can you get us this game by, you know, the end of March. Boom. And it was like, yes, I can. And we did, you know. It was --
MR. KELLEY: Okay. Let's mark as Exhibit 7 --
So, Sandeep, I'm going to mark as Exhibit 7 a document that contains both your files Cast1.bmp and Cast2.bmp.
(DEPOSITION EXHIBIT 7 WAS MARKED FOR IDENTIFICATION.)

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BY MR. KELLEY:
Q. All right. Mr. Bullock, can you tell me what we're seeing here in Exhibit 7?
A. This is a -- this is a screen capture of the authoring -- of Director authoring environment. And the central thing in the middle of this is a large representation of the cast containing the graphics and programming code for the game.
Q. Okay. And so the cast includes some images; right?
A. Yes, sir.
Q. And these were image files that you created; am I correct?
A. Our company did. Yes.
Q. Okay. So, now, I noticed that some of these image files have names or some of the images have names and some have numbers.
A. Uh-huh. Yes, sir.
Q. All right. What's the significance of that, if any?
A. Not significant. They -- there's a little switch within Director where -- well, first off, you could name any cast member, if you wanted to. And you could refer to that cast member by name.
Or if you left it unnamed, you could refer

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in your programming code to that cast member by number. And in the display of a cast, like you have here, there was a little switch you could throw that says, display names and numbers separately, or -- or display them together.
Like you could have switched something in here, and it could say 1:pins1, 2:pins2. You could see both.
Q. Uh-huh.
A. So pins1 and pins2 up in the upper left-hand corner have cast numbers, but they just happen that we gave them names as well for simplicity.
Q. Okay. Now, I see, starting at 11, there's some hand figures. And they go all of the way -- 11, 12, 13, 14, small hand, small hand, left small hand?
A. Uh-huh.
Q. Left small hand, hold ball, hold ball, left hold ball and left hold ball. Can you tell me what those are?
A. Those were small graphics that we used when changing the -- the graphic of the cursor, of the mouse cursor.
Q. Uh-huh. So am I correct that those are different images that would appear as cursors to the user of the game?

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A. Yes, they are. They would tend to pair together when you changed the cursor in certain ways. In Director you needed to have two graphics. One was a mask, and the other was solid.

And so numbers 11 and 12 are a pair that go together. One simply has an outline, and the other is solid. It -- in -- on the screen it would appear like number 11.

Okay. It would appear like a white interior with a blackout line, was how the cursor would appear, but you needed number 12 to show -- to make it opaque, you know, the interior of it.

So 11 and 12 were a pair. 13 and 14 were a pair and so on. You know, as you can see, there are two hold balls. Those are a pair. Two left hold balls. Those are a pair.

Q. Uh-huh. And so the -- the black images, those are just a --

(COURT REPORTER'S CLARIFICATION.)

BY MR. KELLEY:

Q. Black images of these cursor -- various cursors are just to block out what's underneath in the -- in the cast -- in the stage, rather?

A. Yes. They're what you would call the mask portion.

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Q. Okay. And I also see that you have both right-handed and left-handed versions of all of these different cursor images?

A. Yes.

Q. And why was that?

A. Just a small customization. We gave the players a -- a way to choose and say, I'm right-handed.

So when I -- so when I pick up a bowling ball, and I swing it, you know, it would basically curve left to right across the bowling alley to come into the head pin.

Or they could say, I'm right-handed, which if you know, like the curve of golf -- of golf balls. Of bowling balls would basically when you throw it, it would tend to go right to left for a right hander.

And they could choose which they wanted to be in the game. And it was just a way to kind of let them feel like, oh, I can customize this.

Q. So you mentioned earlier at the beginning of our -- of our talk about how one of the reasons the change cursor was to indicate some kind of functionality or capability that the user had?

A. Yes.

Q. Is -- is that how you used cursors in this game, or is that one of the ways you --

A. That's --

Q. -- used cursors?

A. -- very -- yes, and very -- very much so.

Q. So do you remember what the purpose of the small hand was or the hold ball cursors were? What were they indicating to the user?

A. The -- well, let me -- I can kind of -- I think I can kind of go down these.

Q. Uh-huh.

A. And starting with number 11, the -- after somebody chose whether they wanted to be left-handed or right-handed, 11 and 12 will -- let's just say 11. 11 was what the cursor would look like for a right-handed player whenever the mouse moved over a button.

Number 13 would be what a left-handed player -- what the mouse would look like when it rolled over a button. Number -- or not number. Small hand would be the look of the cursor when the -- when the cursor went over a ball that the user could pick up. It was like, oh, I've got my hand out. I'm about -- I can pick up something here. It was to tell the user they could pick up this ball.

Left small hand was, of course, if they were left-handed, same thing. Oh, you know, a flat hand. I can pick up -- I can do something. I can pick it up.

And then when the user actually clicked on the ball, we would do the hold ball or the left hold ball. And the hold ball was when the ball would actually look like it was coming up off the rack, and be in the user's hand. The cursor being the hand.

And then if they moved the cursor around, the ball would track as if they were picking up and holding the -- holding the bowling ball -- bowling ball. So those were -- those were all those iterations there.

Q. So you mentioned that some of these cursors were used when you rolled over the bowling ball or other parts -- things in the game?

A. That's correct.

Q. And, I take it, then when you're -- the mouse is not over those objects, then it has some other appearance? The cursor has some other appearance?

A. We would generally allow that to be the default appearance on -- if they were using a Microsoft, you know, machine, Microsoft's mouse, or an Apple machine, a Apple's mouse. So it -- what you

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would call normal to the user.
Q. It's like the pointer cursor?
A. Yes. The pointer cursor.
Q. Okay.
A. The -- or the normal one that is unaltered from the way Microsoft supplies it.
Q. So if they're rolling the mouse around the game, sometimes they'd see the pointer cursor, and then when they're over certain objects, they'd get the hand?
A. Yes. That's correct.
MR. KELLEY: Okay. I'm going to mark as Exhibit 8 a collection of the images that are called Score1 through 6.bmp, Sandeep.
(DEPOSITION EXHIBIT 8 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. All right. Mr. Bullock, do you recognize what's -- what's in Exhibit 8?
A. Yes. This is -- this is a screen capture of the primary score of this -- of this particular Director file.
Q. And so -- and I'll notice it -- I'll tell you-all, it extends across multiple pages, because I couldn't do a --

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A. Yes.
Q. -- screen cap of the single --
A. Uh-huh.
Q. With the score in the single --
A. Uh-huh.
Q. -- screen cap.
But running across the top horizontally there's a sequence of numbers. What are those?
A. Yeah. The numbers, beginning with the one, and going all of the way out to 110 plus there, each one is a frame, you know, in the -- in what they call the movie. A frame in the Director movie.
And, each frame, you would set it to something like, okay. I want it to display at 30 frames per second. So if you -- if you just let the thing run wild, you know, the first 30 frames would be the first second. And the next 30 frames would be the next second. But you could control it, so that you -- it didn't always just keep running across there.
Q. Okay. And then what's running vertically? What are the member numbers running on the left side of the page?
A. Those were the -- the -- those were the channels in which you would place the graphics. So that -- let's say in channel number one, under member

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one, you have, "dark," D-A-R-K, B-K-G-R-N-D. You can see, "dark" -- that's the dark background that's behind the whole game.
And then in channel number two you have a representation of a gutter. Well, I forget if that was the left gutter or the right gutter, but it was one of the two gutters, you know, behind there.
And then channel four would be the actual bowling lane on top of it. So you start -- and -- and the lower numbers are the things in the background.
The higher the number here the higher the -- the member number, the channel number here in the left-hand column, the -- the higher in the stack it was the closer to you it was vertically. So something in channel number 29 would hide something in channel number 28 below it.
Q. Got it. And I see, for instance, on channel 22, there's something called Helix ball. What is Helix ball?
A. The -- there were three bowling balls that Brunswick wanted to feature in this game. They all had supposed different rolling characteristics, if you were a pro.
One was Czone. One was Rhino, and one was Helix. Those were their three brand names for their

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three types of balls.
Q. And those were actual products that they were selling?
A. Those were actual products that they sold. And if you rolled any of them in this game, they all rolled the same, but they looked different. You know, it -- it is what it is.
Q. So you didn't give them special rolling properties, but they --
A. Not really. I mean, I don't think so. I don't think we did that.
Q. But they did have different visual appearances, I take it?
A. Exactly.
MR. KELLEY: Okay. All right. I'm going to mark as Exhibit 9 -- so, Kay, where are these going to be found? These are in the --
MS. LI: Dropbox.
MR. KELLEY: -- Dropbox. And this is Bowling1.
MS. LI: 1, 2.
MR. KELLEY: Yeah. So we're going to start with Bowling1 and mark --
MR. SETH: Just a second, please?
MR. KELLEY: Of course.

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Marking this as 9.
MR. SETH: I'm sorry. Where are we now?
MR. KELLEY: Kay, can you tell him?
MS. LI: If you go to your Dropbox.
MR. SETH: Yes.
MS. LI: We're starting with Bowling1.
MR. SETH: Like in Brunswick?
MR. KELLEY: No, no.
MS. LI: The Dropbox.
MR. SETH: Yes. I'm in the Dropbox. Oh, I see. Okay. Got it. Got it. Got it. I'm there.
(DEPOSITION EXHIBIT 9 WAS MARKED FOR IDENTIFICATION.)
THE WITNESS: Thank you.
BY MR. KELLEY:
Q. All right, Mr. Bullock. Do you recognize what we see in Exhibit 9?
A. Yes. This is a screen capture of the Director programming the stage. And this is one of the frames, and this is -- this is how the Brunswick -- this is the closest to how the Brunswick game would appear to the -- or not the closest. This is how the Brunswick game would appear,

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you know, to the public when they played it.
Q. So, now, was one of the features in Director that you could preview how the game worked?
A. Yes.
Q. Okay.
(INTERRUPTION IN THE PROCEEDINGS.)
MR. KELLEY: Let's go off the record.
THE VIDEOGRAPHER: Off the record at 11:57 a.m.
(RECESS FROM 11:57 A.M. TO 11:58 A.M.)
THE VIDEOGRAPHER: On the record at 11:58 a.m.
BY MR. KELLEY:
Q. All right. So -- and I see three bowling balls at the top of the -- of the game here; is that correct?
A. Yes.
Q. And those are the Zone and the Rhino and the Quantum that Brunswick was selling?
A. Yes, they are.
Q. Okay. Now, on the left-hand side I see something that looks like a ball return.
A. On the left --
Q. I'm sorry. Right-hand side.
A. The right-hand side. Yes.

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Q. My apologies.
A. Yes, yes. On the right-hand side. Uh-huh.
Q. And it has two objects in it. What are those?
A. Those are smaller representations of the bowling balls.
Q. Okay. Can I move those?
A. Yes.
Q. Okay. And then there's some -- there's a set of little arrows to the right of the Brunswick name in the middle of the bowling lane; correct?
A. That's correct.
Q. And what are those arrows?
A. Those are pointer arrows to show the starting line of your -- of your -- of your throw.
MR. KELLEY: Okay. I'm going to mark as 10 the next image.
MR. SETH: Can you tell me what the image is in the directory, please?
MR. KELLEY: It's just the next one. It's 2.
MR. SETH: Oh, okay.
(DEPOSITION EXHIBIT 10 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:

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Q. And so do you -- and now it looks like I have moved the cursor over the, "I'm a left-handed bowler," or the -- the display on the bottom portion of the game; right?
A. Yes.
Q. And I notice that, whereas, in Exhibit 9 the cursor was the standard arrow pointer, now it has become one of the handed pointers; right?
A. Yes.
MR. KELLEY: Okay. Let's mark this as 11.
(DEPOSITION EXHIBIT 11 WAS MARKED FOR IDENTIFICATION.)
MR. KELLEY: Sandeep, we've skipped to 4.
MR. SETH: Thank you.
BY MR. KELLEY:
Q. All right. So now we've moved the cursor again; correct?
A. Yes.
Q. And it is over those little arrows; right?
A. Yes.
Q. And it has turned into the hand again; correct?
A. Yes.

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Q. Do you remember why you did that?
A. Yes. To tell the player that they could click on any of those aim arrows to indicate which one they want to roll the ball over.
MR. KELLEY: Okay. Let me give you -- I'm going to mark this as 12.
MR. SETH: Is this 5?
MR. KELLEY: It is 5.
(DEPOSITION EXHIBIT 12 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. All right. So what's happening in Exhibit 12?
A. Related to the cursor, the player has moved the cursor up over -- the instructions on the top left say, "Choose two balls by dragging them to the ball return."
So that sort of tells the users, hey, do something with these balls. And if they move the cursor up over one of the balls, it changes into the flat hand, indicating, hey, I can do something with the ball.
Q. All right. And so that's different than -- the cursor now is -- is a hand, but it's a different hand than the one that we saw when we were over the

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arrows; right?
A. Right. Over the arrows you're telling people, click on this. And over the balls you're telling people to drag them basically.
I mean, they -- the written instruction says drag them, but -- so you've got a different -- a different look to the cursor.
Q. Now, I also noticed that there's a text box in the lower right-hand portion of the display.
A. Yes.
Q. There's some green text on a black background --
A. Yes.
Q. -- correct?
A. Uh-huh.
Q. And in Exhibit 11, when we were over the arrows, that text has information about the lane arrows; correct?
A. Looking back at Exhibit 11, yes, it does.
Q. And, now, in Exhibit 12, when I move the cursor over to the Quantum ball, it's telling me about the Quantum ball; correct?
A. Yes.
MR. KELLEY: And then let's mark this as --

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MR. SETH: Objection to form. I'm sorry. Are you still on 5?
MR. KELLEY: Yes, I think so.
MS. LI: Yes.
MR. KELLEY: Yup.
I'm going to mark as 13 6.
(DEPOSITION EXHIBIT 13 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. All right. Now, if we compare Exhibit 13 to Exhibit 12 -- excuse me -- what's happened? What's the difference?
A. The user has moved the mouse over the Rhino ball, and the -- the text in the bottom right has changed, and that's what's called a rollover.
It has changed -- the rolling over -- the mouse over the ball now has changed the text on the bottom right to describe the Rhino ball.
MR. KELLEY: Okay. All right. We're going to make this 14.
(DEPOSITION EXHIBIT 14 WAS MARKED FOR IDENTIFICATION.)
MR. KELLEY: Sandeep, I skipped over one.
MR. SETH: Need to know that. Yeah.

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So it would just be helpful. Is it 8?
MR. KELLEY: Unfortunately, I have the hard copies. So --
MS. LI: It is 8.
MR. KELLEY: It is 8. I am told by good authority that it's 8.
BY MR. KELLEY:
Q. All right. So now we're in -- where is the mouse located now?
A. The mouse is located to the right side of the game over just the general bowling, you know, standing area.
Q. And it's gone back to an arrow cursor; right?
A. Yes.
Q. And I see the explanatory text below says, "Roll your mouse over various elements in this game to see a brief description of how things work."
A. Yes.
Q. So what does that convey to the user?
A. Well, that's -- that's an instruction. And that's actually -- unless the mouse is over something that -- that is explained, that is kind of the default instruction there for that area.
MR. KELLEY: All right. So we're going

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to 9, Sandeep. This is going to be Exhibit 15.
MR. SETH: Very good.
(DEPOSITION EXHIBIT 15 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. All right. So if you can compare 14 to 15 -- or 15 to 14, rather, what's happened?
A. Okay. The -- in 14, of course, the mouse cursor is not over some important component of the game. Whereas, in -- in the next, in Exhibit 15, the mouse cursor is now over one of the two bowling balls, and the mouse cursor has changed to an open hand.
At the same time the instruction says, "Click and carry this ball into the bowling area and release it to throw."
MR. KELLEY: All right. I'm going to mark the next image as Exhibit 16.
(DEPOSITION EXHIBIT 16 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. All right. If you could explain, Mr. Bullock, what we're seeing in Exhibit 16?
A. In Exhibit 16 -- between Exhibit 15 and 16, in 15 it shows the open hand over the top of the bowling ball. If a user at that point clicks the

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mouse, okay, then the cursor changes to look as if it is a hand carrying the bowling ball.
And now in Exhibit 16 the hand is actually moving, slash, carrying around the bowling ball, so that -- and the mouse is down. So that as the mouse is moved the bowling ball tracks along with the mouse.
Q. Is the -- let me strike that.
What is a sprite in the context of Director?
A. Sprite is a -- is -- typically is a graphic that is sitting in one of the channels. Remember, we had the member channels in that display of the score.
And each one of those numbers on the left represented a sprite channel. So -- so each of these -- each of these bowling balls would be in a separate sprite channel.
Q. Okay. And is the -- is the bowling ball -- I noticed that the -- the bowling hand, with the fingers and, you know, depicted being inside the bowling ball is -- is overlaying the bowling ball.
Are they -- are they part of a -- are they separate design elements, or are they a single design element?
A. They're -- they're separate design elements. And in this case the -- the hand is a cursor, and the ball is a graphic.

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Q. Okay.
A. Okay? And -- and just -- just -- because I think it's essential in here. Cursors always ride above everything, unless you hide the cursor entirely and make it disappear.
Q. Uh-huh.
A. But if there's a cursor on the stage, a cursor will sit -- remember, we had a stack of -- of sprite channels, where the higher numbers sit on top of the lower numbers. A cursor always sits on top of everything.
Q. Okay. Now, if I'm a player, and I'm in this position here, where we see in Exhibit 16, what do I then do to -- to actually throw this ball and play the bowling game?
A. Well, you have -- you -- okay. There is a -- they're the words min and max behind the -- behind -- to the -- to the very right edge of the graphic there.
Q. Uh-huh.
A. And they're -- they're little green within there. It goes up and down. And that's varying the amount of minimum spin and maximum spin. Maximum spin means a ball that curves like crazy. Minimum spin is like a ball that goes relatively straight.

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And so if you're right-handed -- if you're -- when you're bowling, when you're the player in this game, you carry the ball over to the line that is like the beginning of the lane itself.
And you wait for -- and you've already told it by clicking the -- one of the little arrows within the lane, I want to go over -- see there's a little red one there.
I want to go over that little lane arrow. I want to throw it over that. And you wait until the spin is where you want it to be. Minimum spin or maximum spin in order to throw a good ball that, you know, hits the head pin, you know, just to the side, the way you want to hit a head pin to get a strike.
Q. And --
A. So those are all control elements. The minimum, maximum spin, the place that the ball starts when you release the mouse.
And then the little point that the ball is going to roll -- the little arrow the ball is going to roll over. They all control where the ball is going to end up when it gets down to the pins.
Q. And do you have to move the -- the mouse like you would if you were swinging the ball?
A. No, no. It's a simple release. You just --

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Q. Okay.
A. You just -- what they call a mouse up. You just release the mouse to make it go. You don't have to -- you don't have to impart any speed to it, because the game itself will -- will -- will do that.
MR. KELLEY: All right. Well, I'm going to mark as Exhibit 17 -- we're going back into the Brunswick folder, Sandeep, and this is going to be Script 177.txt.
(DEPOSITION EXHIBIT 17 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. Mr. Bullock, I'll represent that this is the text from the Lingo code for item -- cast member 177. Does this look familiar to you?
A. Yes, it does.
Q. What is -- what -- can you tell us, just very generally, what this code does, if you remember?
A. Okay. It's taking me a minute. I just -- I just want to make sure I'm accurate here.
Q. No. Please. It's important.
A. All right. This is -- this is the script, the programming code, for picking up and carrying around one of the bowling balls.
And the on mouse down is -- is what happens

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when you actually click on the -- on the bowling ball.
Q. Yup. Okay. And I notice in line 21, it says, "Set the loc of sprite OC" --
A. Uh-huh.
Q. -- "equal to point" -- and then it's a function of mouseH and the mouseV. Do you see that?
A. Yes, I do.
Q. So what is sprite OC, if you remember?
A. Yeah. That's the one clicked. I mean, that's my shorthand for one clicked.
Q. Got it.
A. And that is set up in -- in line number three, where it says, "Set OC equals the clickOn." The clickOn is the thing that was clicked, is the sprite number that was clicked.
Q. Yup. And so it's setting the loc of sprite OC to be this point; correct?
A. Yes. It's setting the location of that sprite -- the sprite in this case being the bowling ball -- to be -- to being the same as the horizontal location and the vertical location of the mouse.
Q. So will this cause the -- the sprite OC to follow the mouse?
A. Yes.
Q. Okay.

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MR. SETH: Objection to form.
BY MR. KELLEY:
Q. And in the lines above 16 through 19, I see that we're changing the width and height of the sprite OC.
A. Yes. What is in -- let me start -- let's start with -- with number -- line number 15 and go through 23, because that's important to the whole thing.
Line number 15 says, "Repeat while the stillDown." And what that means is as long as the user is holding the mouse down keep doing a loop. Keep repeating this -- these actions.
Okay. And line 16 is -- is basically setting a percentage, which is, you know, how far away or how close to, you know, a point the mouse horizontal location is.
And then what I'm doing in line 17 through 20, which was your question, I'm setting the -- I'm setting the ball. So it looks like when you pick up the ball off the rack, so I think if -- my recollection is pretty good on this.
When you pick up the ball, so that the ball size changes as if you were -- because the whole view is top down. You want it to look like when you pick

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something up it gets closer to you. When you put it back down -- when you release it and put it back down, it gets smaller.
Q. So it's changing the size of the bowling ball --
A. Bowling ball. To --
Q. -- and --
A. -- make the bowling ball look --
(COURT REPORTER'S CLARIFICATION.)
MR. KELLEY: Sorry.
THE WITNESS: I'm sorry.
BY MR. KELLEY:
Q. Changing the size of the bowling ball to make the bowling ball dimensions change, and that's based on where the mouse is on the -- on the game; right?
A. Yes.
MR. SETH: Objection to form and foundation.
MR. KELLEY: Okay.
MR. SETH: Chris, can you tell me what that -- what that exhibit number was, please?
MR. KELLEY: 17.
MR. SETH: Thank you.
MR. KELLEY: All right. We're going to

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mark as 18 the Script 140.txt.
(DEPOSITION EXHIBIT 18 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. All right, Mr. Bullock. I'll -- this is the -- I'll represent that this is the code from the cast member 140. And I see at line one it says, "Arrows." Do you see that?
A. Yes, sir.
Q. What is -- does that indicate anything to you about the content of this code?
A. Yes. In this game the arrows would be the lane arrows, the small pointy things that are pointing left down the lane -- down the bowling lane.
Q. One of those was highlighted in red in some of the images we looked at; is that correct?
A. Yes, it was. That would have been the active one. Uh-huh.
Q. Okay. Now, in lines 12 and 14 I see some instructions that read, "Set the cursor of sprite myAllSprite."
And then it's -- you're setting it equal to an array or a list of a couple of elements?
A. Uh-huh.
Q. What is -- what does that do?

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A. That is a -- we talked earlier about how the cursor could be switched to look like a pointing hand or to an open hand or whatever. Those two, like 11 and 12, "Set the cursor of sprite myAllSprite," was 11, 12.
11, 12 would be two of the cast members for -- for that sprite. Say -- and I think in this case it was the pointing -- you know, the pointing right hand, if gHanded is one, that's probably right-handed.
And if gHanded isn't one, then that's probably left-handed. So 12 -- 11 and 12 are the right-handed cursor, and 13 and 14 would have been the left-handed cursor.
Q. And there's two numbers there, because one of those is a mask, and one of them is the --
A. Exactly. Those --
Sorry.
Q. No. Go ahead.
A. Yes, sir.
MR. SETH: Yeah, objection to form.
BY MR. KELLEY:
Q. All right. Let's do the question again.
So there's two numbers there. Am I --
MR. SETH: I just want him testifying,

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not you.
MR. KELLEY: I know, but he's already testified about this, Sandeep. I mean, you're -- that's fine. You can make any form objections you want, but your objections are frivolous.
BY MR. KELLEY:
Q. Anyway, so there's two numbers there, because, as you testified earlier, one -- when I have a cursor, one of them is an outline, and one of them is a -- is a mask; is that correct?
A. That's correct.
MR. KELLEY: Okay. All right. I'm going to mark as Exhibit 19 the file Script 139.txt.
(DEPOSITION EXHIBIT 19 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. All right, Mr. Bullock. Do you see the first line it says, "Ball"?
A. Yes.
Q. Does that give you any indication about what this Lingo code is?
A. Yes. This is -- this is a lot of code, but that -- it is because the ball is like the center of everything that happens in this game. So, yes, this

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is the main control script for the -- for the ball that actually rolls down the alley. The ball that is picked up, you know, by the cursor when -- when it's clicked on.
MR. KELLEY: Okay. And then I'm going to mark as 20 Script 134.txt.
MR. SETH: I'm sorry. Could you repeat?
MR. KELLEY: So 20 will be Script 134.
MR. SETH: Got you.
(DEPOSITION EXHIBIT 20 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. So, Mr. Bullock, the heading on this file is -- or the first line is, "Misc."
A. Uh-huh.
Q. Do you remember what that indicates?
A. Yes. Almost all of the games we ever did had at least one cast member that was miscellaneous. It was where we would put snippets of code that could be called from anywhere within the -- within the -- the production, but that didn't really need to be assigned to a particular sprite or to a particular cast member.
Q. All right. So I'm going to call your

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attention to a function called NewCursor, which is on line 324.

MR. KELLEY: And for your purposes, Sandeep, this is very close to the bottom.

MR. SETH: Yeah, I don't have line numbers on what's in my directory. Are you --

MR. KELLEY: Well, that's --

MR. SETH: -- saying it's on the miscellaneous -- on the first page, near the bottom?

MR. KELLEY: Well, so -- so this function is called NewCursor, and it is very near the bottom of the file.

BY MR. KELLEY:

Q. The line begins, "On NewCursor." And then it ends with SLIST, CCASE?

MR. SETH: Yeah. I'm -- I'm rolling to the bottom. I'm just letting you know that these that are in my directory have no line numbers. So I can't go to a line number.

MR. KELLEY: Understood. That's why --

MR. SETH: But I'm -- it's -- the bottom of the file that I'm looking at, which is Script 134, kind of has this KILLMELIST --

MR. KELLEY: Yeah. So --

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MR. SETH: -- that you have done. Am I in the right place?

MR. KELLEY: You are in the right place. So there's a function CheckWebDone. And then if you skip up, the next function up is something called SetUpMusicList. And the next --

MR. SETH: I see it.

MR. KELLEY: The next function above that is called NewCursor, which is what we're going to talk about.

MR. SETH: And your version has line numbers?

MR. KELLEY: Yeah. When we printed them out, we added line numbers.

MR. SETH: Okay. The ones I'm provided don't have those.

MR. KELLEY: No. You have the original.

MR. SETH: But I'm there.

MR. KELLEY: If you had been here, you would have a copy with line numbers.

All right. So, Mr. Bullock --

MR. SETH: No, no. Chris, let's not be ridiculous. I mean, sharing -- sharing exhibits with the -- the exact version of the exhibits is

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routine --

MR. KELLEY: Yes. Well --

MR. SETH: -- for .pdf's.

MR. KELLEY: We set that up.

MR. SETH: No.

MR. KELLEY: You choose not to take advantage of it. So -- so you have the original file.

MR. SETH: No, no, no. I'm not talking -- I'm talking about with Zoom.

MR. KELLEY: No, no. I'm saying is we have these -- these .txt files with their line numbers ready to go. So --

MR. SETH: I'm sorry if it's not your routine to share exhibits with -- with the opposing counsel remotely. That -- I'm just saying that's -- that's typically what's done, but let's move on.

MR. KELLEY: No. There's -- there's -- well, anyway -- I mean, this is a foolish argument.

BY MR. KELLEY:

Q. All right. So you see on line 324, it says, "On NewCursor SLIST, CCASE"?

A. Yes, sir.

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Q. All right. So what is -- do you remember what NewCursor does?

A. NewCursor is a -- is a function that can be called from -- these scripts in the miscellaneous can be called from anywhere in the game at any -- from any frame at anytime.

And if I said -- it said, "NewCursor," and I sent a list, the SLIST -- and the SLIST would be a -- a list of the sprites. Okay. And the sprites could -- would be the images on the screen, the -- the graphics.

And I sent -- sent a list of the sprites and a case. And the case would be -- it could be one of like -- would be a number. Like a zero, a one, a two or a three.

In this case I'm just looking at this first little block of code here. So if I said NewCursor. And my list was sprites number 5 and 6. And then if the case was zero, I would be saying for those sprites, for those graphics on the screen, set the cursor to CCASE zero.

And CCASE zero means basically the cursor of that sprite in that list would be zero. And the zero cursor is the default system cursor. Okay.

Q. That's the arrow cursor?

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A. Yes, sir. That's the arrow cursor.
If I then -- but, instead, if I said NewCursor, with a sprite list of sprites 5 and 6, which are two -- let's say they're two graphics.
And I said, CCASE of one, then basically we'd go down to the case 1, and repeat with I -- with I in the sprite list. So 5 and 6. Set the cursor sprite 5. And then set the cursor sprite 6 to the two cast members, the pair of cast members 11 and 12.
Q. Uh-huh.
A. So it was just simply something that could be called from anywhere in the game. The set cursor is different sprites.
Q. And the number CCASE, you said zero corresponded to the -- the system cursor. And then the other numbers corresponded to -- do you recall?
A. To custom cursors. The cursors that I'm making, you know, with my own graphics.
Q. So one of those numbers would correspond to the bowling hand with the fingers inside the bowling ball; is that correct?
A. Yes, sir.
Q. Do you remember which one that was?
A. No. I -- I could go back to an earlier exhibit.

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Q. Yeah.
A. I could go -- hold on a second, because they're all in a stack here.
Okay. If I went back to Exhibit Number 1. Okay. Right. If I go -- and that's Exhibit -- or -- no. I'm sorry. Is that -- that's a 1, isn't it? Or --
Q. I think it's a 9.
THE WITNESS: That -- what number is that?
MR. KELLEY: It's a 9.
THE COURT REPORTER: 7.
THE WITNESS: 7.
MR. KELLEY: 7. Oh.
THE WITNESS: It's a 7. I'm sorry.
Okay. If I go back to Exhibit Number 7, then, looking at the script, where it says, "Set the cursor of sprite i equals (11, 12)"
BY MR. KELLEY:
Q. Yeah.
A. Then numbers 11 and 12 would be the right-handed pointing single finger up. You know, kind of this -- if you can see my hand position, it would be this position for a right-handed person.

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And -- and number 15 and 16 would be -- the open hand would be small hand is 15, and the other small hand is 16. Okay. The open palm. So --
Q. And then 3 is -- is that the one with the fingers in the bowling ball?
A. The 3 is numbers 19 and 20. And 19 and 20 -- again, with these -- so 15, 16, 17, 18, 19, 20 -- yes. Those are the hold ball. The two hold ball cursors.
Q. Okay. And then I see before each of these there's a line that appears -- or, I should say, under zero, one, two and three, the different cases for the value CCASE, we have a line that says, "Repeat with i in SLIST."
A. Uh-huh.
Q. So that's a loop; right?
A. That is a loop. Yes, sir.
Q. And I'm repeating over the elements in the SLIST; is that correct?
A. That's correct.
Q. Okay. And what I'm doing is I'm setting the cursor of sprite i equal to be one of these values that you identified; right?
A. That's correct.
Q. Now, what is the line, "Set the cursor of

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sprite" -- some number. What does that do in Director?
A. In Director that basically says whenever the user -- the sprite is the graphic on the screen. You know, it could be the bowling ball. It could be a button, but it's an element that's on the screen.
And it says when the mouse is over that element on the screen, the cursor should change to follow -- it should change according to these instructions to -- to one of the custom cursors or the default cursor.
Q. And -- so when I call this function NewCursor, I provide this list, SLIST; correct?
A. That's correct.
Q. And depending on how I've set CCASE, it's going to define the -- the cursor for those -- those sprites in my SLIST that I provided; right?
A. That's right.
MR. KELLEY: Okay. Let's mark as Exhibit 21 the Script 173.
(DEPOSITION EXHIBIT 21 WAS MARKED FOR IDENTIFICATION.)
THE WITNESS: Thank you.
BY MR. KELLEY:
Q. All right. So do you see in this file,

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Script 173.txt, which I will represent is the Lingo script for cast member 173 or is the Lingo script associated with cast 173. Do you see some lines that say, "NewCursor"? This is lines four and five.

A. Yes, I do.

Q. What -- how do those relate to the NewCursor function we saw just in Exhibit 20?

A. Line four, NewCursor says, these six -- these elements on the screen -- one, two, three, four, five -- these elements on the screen, which are sprites numbers six, 35, 36, 32 and 38, these should be set to CCASE in -- in the case function number one. So the SLIST that you're passing is everything inside of the brackets in bracket six to after the 38. That's your list. And that's the list of sprites you were passing. And the one says use CCASE number one.

Q. Uh-huh.

A. Okay? And the next line, line number five -- two, three, four -- has five other numbered sprites, and it's saying set their cursor to number two.

Q. And when you say set the --

A. CCASE -- CCASE-2.

Q. And when you say, set their cursor to the

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CCASE value two, is it going to change the cursor right away or what does it do?

A. If -- if the mouse pointer happened to be over any of these sprites, you know, any sprites number 40, 41, 45, 46 or 47, at the instance you -- that you say, NewCursor, it will change instantaneously.

Q. Uh-huh.

A. But it will not just change instantaneously. It will change until the next time you tell it -- or until those -- until those elements on the screen either go away or you set their cursor to something else.

Q. Okay. Suppose I'm not over sprite 41 at the exact instance that line five is -- is executed --

A. If -- if your mouse happens to be over none of those -- none of those sprites, the ones in line four or lines number five, then -- then chances are the cursor is going to stay the pointing arrow, the default, you know --

Q. Okay.

A. -- system arrow.

Q. But if I then roll -- roll my mouse over to one of those elements, and that's listed in your list, SLIST, there for line five, what happens?

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A. Then from here, from this place, this frame forward, then -- then the cursor will change when it's rolled over those -- those sprites.

Q. Okay. When -- do you remember when this Lingo script 173 -- at what point this Lingo script gets executed in the game?

A. It could have been any of -- of several places. No. I --

Q. Okay.

A. I can't -- if -- if -- if I -- if I had the environment, if I had the -- the file open and the environment, it would be a snap.

Q. Yeah.

A. We could jump right to it, but, no, I can't tell.

MR. KELLEY: Let's go off the record.

THE VIDEOGRAPHER: Off the record at 12:36 p.m.

(RECESS FROM 12:36 P.M. TO 1:27 P.M.)

THE VIDEOGRAPHER: On the record at 1:27 p.m.

MR. KELLEY: All right. I am going to mark as Exhibit 22 the file Script 181.txt.

(DEPOSITION EXHIBIT 22 WAS MARKED FOR IDENTIFICATION.)

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(DISCUSSION HELD OFF THE RECORD.)

MR. KELLEY: Sandeep, this is in the same Brunswick folder.

MR. SETH: Got it. Which one?

MR. KELLEY: 181.txt.

MR. SETH: Okay. Thank you.

BY MR. KELLEY:

Q. All right, Mr. Bullock. Have you seen Exhibit 22 before?

A. It appears to be one of the scripts from the game.

Q. Okay. And do you see -- there's a line that says, "NewCursor," and then, in brackets, "OC, 3"?

A. Yes.

Q. Do you -- you remember we were discussing the NewCursor function before?

A. Yes.

Q. Is this a call to that function?

A. Yes, it is.

Q. And do you remember what the value 3 represented?

A. It would -- that represented -- I believe it represented the open hand cursor, but it might -- it might have been the pointing finger cursor. I -- honestly, there was 0, 1, 2, 3.

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Probably the -- probably the -- well, actually, probably the grabbing with fingers and the ball cursor.

Q. Okay.

A. Well, I could -- do you want --

Q. Do you want to go back to Exhibit 20 and -- and look --

A. Yes.

Q. -- see if it --

A. Let -- let me look --

Q. Okay.

A. -- at Exhibit Number 20.

Q. Okay. And, remember, we were looking at the NewCursor function in Exhibit 20, which is near the bottom of the file.

A. Yeah. Yes. That sets the cursor to the two cast members 19 and 20. And, per the Exhibit Number 7, numbers 19 and 20 are basically -- are basically named hold ball. H-O-L-D, B-A-L-L. Which would be the -- the hand inside of the -- of the -- of the bowling ball.

Q. So some of the fingers --

A. Fingers -- fingers and --

Q. -- on the hand are cut off, as if they had been inserted into the bowling ball; is that correct?

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A. That's correct.

Q. Okay. Now, going back to Exhibit 22, which is Script 181, you're setting -- you're calling NewCursor and the sprite -- in the sprite list, but you're sending to that function is just OC?

A. Yes, sir.

Q. What is the OC sprite?

A. OC is the sprite that is the ball that was clicked on. That would -- I would think that OC equals the click on, and -- let me see.

Q. If you'd look at the third line in the file, it says, "Set OC equals" --

A. Yes.

Q. -- "the clickOn"?

A. "Set OC equals the clickOn." So, yes, it would be the thing that was clicked. And in this case the thing clicked is the ball.

Q. Okay. And so this is -- what effect is this having on the cursor?

A. This is changing the cursor from -- from whatever it was before, which is not apparent from this script as to what it was before, to when the ball is clicked to the cursor that -- that has the fingers inserted in the ball.

Q. Okay. Now, we were talking earlier about

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when you're defining cursors, you have -- you had a cast member that was a mask, and then a cast member that was the outline of the hand?

A. Yes.

Q. And you said that the mask was used to block what was behind. So all that's saw was -- was the outline; correct?

A. Yes.

Q. What about the stuff around -- let me strike that.

Do I have to tell Director the precise parameters, the exterior? Do I have to define the contours around the hand and tell it, this is the dimensions, this is the -- this is the location of the cursor?

A. I'm not sure I exactly understand your question.

Q. For good reason, because my question was terrible.

The -- the cursor -- the images when you create them --

A. Uh-huh.

Q. -- their extent, is it -- is it a rectangular extent? Do they have a --

A. Yes, it is.

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Q. -- width and a height?

A. Yes, it is.

Q. Okay. And are they -- if I don't have the mask, what happens?

A. If you didn't have the mask, if -- if you only had the one single cursor --

Q. Uh-huh.

A. -- the outline --

Q. Uh-huh.

A. -- then the area inside of the outline -- the outline would still be black, but the area inside of the outline would be transparent. So you would see through it.

So it would look like a little black outline moving along. There would be no white in there. The fact that it is opaque that is -- that is paired up with something that is completely black actually is what makes the inside of the cursor white.

Q. Okay. So the -- the function then, if I understand it, of the mask is to block the stuff directly behind the mask from coming through?

A. That's correct.

Q. And where I don't have a mask -- or that -- or where I haven't made the mask black, the pixels are going to come through?

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A. Yes. They are transparent.
Q. Okay. So --
A. Yes.
Q. So --
A. That area is transparent.
Q. Yeah. So even though the image itself is square, I'm blocking a particular portion of that square -- of the pixels from coming through and the viewer seeing them in the animation; is that correct?
A. That's correct.
Q. And then -- so then the pixels that are -- that are inside the hand image, but not -- inside the extent of the hand image, the width and the height of the hand image, but not blocked by the mask will pass through; correct?
A. That's correct.
Q. Okay. And I will see what was behind whatever it is in the stage behind while -- I will see that on -- in the game?
A. That's correct.
MR. KELLEY: Okay. All right. My apologies. Bear with me for one second.
All right. Let's move on to --
Sandeep, we're going to be moving on to the Prowler directory. It's --

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MR. SETH: Sorry. Which one?
MR. KELLEY: -- L_prowl.
MR. SETH: Got it.
BY MR. KELLEY:
Q. Do you remember, Mr. Bullock, a Prowler bauble?
A. Yes.
Q. What did the Prowler bauble do?
A. I wish I could see it, to be honest with you. It had to do with a window and somebody peeking through the window, as if there was a window inside of the web -- as if you placed it on a web page, this particular Shockwave piece, it was as if there was somebody walking around like behind the web page, peeking out at you from time to time.
Q. And was this interactive in any way?
A. I remember that it was. I think -- and I think it did -- you know, if I was looking at the code --
I'll have to refresh myself, but I think it had to do with if you took your mouse up there, that it would scare the person away or something. The person would -- the prowler outside the window would duck and hide.
Q. Okay.

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A. I could be off on that --
Q. Uh-huh.
A. -- to be honest with you, but that's --
Q. But your rec --
Sorry.
A. Yeah.
Q. Your recollection is that you moved the mouse, something happened?
A. Yes.
MR. KELLEY: Okay. I am going to mark as Exhibit 23 the file that's -- it's .dir, with L_prowl.bmp.
(DEPOSITION EXHIBIT 23 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. Mr. Bullock, do you recognize -- well, let me strike that.
I will represent that this is part of a directory printout from one of the CDs that you've provided to us. Do you -- do you -- do you know what these are here?
A. Yes. I can read down this list of files, and they are essentially a lot of files that had to do with the Shock-Baubles that we -- that we created.
Q. And there's -- one of them has been clicked

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on or highlighted, and it says, "L_prowl.dir." Do you see that?
A. Yes, I do.
Q. And it has a date of May 23, 1996?
A. That's correct.
Q. Does that -- is that consistent with your recollection of the timeframe for when you had -- created this Prowler?
A. This would be consistent with the -- with the general period of four or five months in that year of 1996, when we were creating almost all of these baubles. Yes.
MR. KELLEY: Okay. I'm going to mark as Exhibit 24 the cast. So it's Cast.bmp.
(DEPOSITION EXHIBIT 24 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. Mr. Bullock, do you recognize this exhibit?
A. Yes.
Q. And is this the cast for the Prowler game?
A. Yes, it is.
MR. KELLEY: All right. I'm going to mark as Exhibits 25 and 26 Script 6 -- I'm sorry -- Script 5 and then Script 6.
(DEPOSITION EXHIBITS 25 AND 26 WERE

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MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. All right, Mr. Bullock. I'm going to represent to you that these are the Lingo scripts corresponding to cast members 5 and 6 in the Prowler animation.
So Exhibit 25 is Script 5, and Exhibit 26 is Script 6. Do you -- can you tell from looking at Script 5 and Script 6 what these are controlling?
A. Yes. Script Number 5 is basically a frame script, which means that it is attached to -- to a frame. And that -- and a frame script is something that runs every time that the frame had. Remember, the movie metaphor runs through this frame.
The last part of this script is on exit frame go to the frame. It basically says go and repeat and keep doing this until something jumps me out of this. In other words, go and keep playing the same frame over and over and over again.
Q. And is the thing that jumps you out of that, is that the lines that talk about TEMP being greater than minus 30 and TEMP being less than LWidth plus 30?
A. Yes, yes.
Q. So what are -- what are we checking for in that line?

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A. We are checking -- checking for the horizontal position of the mouse up in line number three. Put the mouseH into TEMP. TEMP is just my name for temporary variable.
So I'm storing the -- the mouse's horizontal -- the mouse cursor's horizontal location. And then I'm setting an offset in line number five is -- which is 75 minus the mouse's vertical location.
And then I'm saying in line number six if the mouse's horizontal location, which is the value stored in TEMP, if it's greater than minus 30, and it's less than the width of -- of the movie plus 30, then set the -- set two variables.
LFrame equals one and LOrigMouseV to -- you know, which would probably have to do with the -- the original mouse vertical equals the mouse vertical -- the mouse -- the vertical position of the mouse.
Q. Okay. And then there's a line that says, "Go to"?
A. Go --
Q. "Go to MoveHim."
A. Yeah. "Go to MoveHim," meaning is -- is jumping the frame. Instead of the -- the exit frame saying go and staying in the same frame up there, line number nine. We'd say, go ahead.

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If the -- if the -- if the mouse position is -- satisfies those parameters, then go ahead and jump the whole frame head to a marker named MoveHim.
Q. Uh-huh. Okay.
A. And that's --
Q. Do you -- do you recall if MoveHim had anything to do with Script 6?
A. It probably did. I can't -- I can't say for sure. If -- if we were in the authoring environment, I could tell you definitively, but in this case this looks like -- this looks like an important script, where -- you know, that it would be jumped to.
And this is where the main action in the movie, in the -- in the -- in the -- in the Shockwave movie would actually take place, is probably in this script.
Q. Okay. So what's happening in Script 6 in Exhibit 26?
A. In lines three and four we are storing the mouse's position. Its horizontal, mouseH, and its vertical position in two temporary variables. TEMPH and TEMPV.
In line seven we're checking -- we're basically making sure that the -- that the mouse's horizontal position is kind of in the same range as

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right around the -- the position of the -- because you -- you can check and see where it -- when the mouse is like way outside of your animation.
This is basically checking to make sure that it is within -- either within your animation or within a few pixels left and right of the animation.
Q. And a few pixels left and right are the 30 minus --
A. 30.
Q. -- and plus 30 --
A. Minus --
(COURT REPORTER'S CLARIFICATION.)
MR. KELLEY: I'm sorry.
BY MR. KELLEY:
Q. The few pixels within the context of the window, you can be within minus 30 or plus 30 of the -- of the window; is that correct?
A. That's correct.
Q. Okay.
A. If -- and if it is -- oh, no. If -- if it is outside -- if it is -- if it is outside of minus 30 or plus -- or outside of plus 30 on the right-hand -- you know, on the left and right, then we go to holding, which is basically a frame that maybe this first script, which does nothing.

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But if the mouse is within those parameters, and, therefore, close to the animation, close to the window, then -- then we proceed to do a number of things, which is in terms of setting the color of sprites, you know, to particular color numbers and setting the location of the sprites to the horizontal position of the mouse that's down in line 25.

And we're checking the vertical position of the mouse. And, you know, if the vertical position of the mouse is less than 30, 43, then set the vertical -- not the vertical position of the mouse.

We're not setting the mouse, but set -- we're setting -- we're setting the variable, the V, to 43.

Q. Uh-huh.

A. And then in the end, after we do a little more computation in line 29, we set the -- the vertical location to sprite 1 equals to THEV. The variable THEV.

Q. And who -- what is sprite 1?

A. Sprite 1 -- my belief -- yes. Sprite 1 would be the man, the prowler, you know, that back in Exhibit Number 24 you'll see that there are three views of a man and cast members number one, two and three.

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And that is basically the representation of the Prowler, who is going past this window --

Q. Uh-huh.

A. -- in the web page.

Q. And if I look back at 24, I see that I have sort of three different profiles of the man. And he's going -- he's facing left --

A. Uh-huh.

Q. -- right or center; right?

A. Yes.

Q. And if I look here in Exhibit 26 at the code, I'm selecting from -- I'm setting the value, the castNum, of sprite 1 in one case to be one?

A. Uh-huh.

Q. Which is, I think, looking to the left --

A. Uh-huh.

Q. -- there?

A. Uh-huh.

Q. And then a little bit down -- further down, a different case, I'm setting the castNum of sprite 1 to be three?

A. Right.

Q. And that would be the sprite looking to the right; correct?

A. That's correct.

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Q. And then a little bit further down, the last case, I set the castNum of sprite 1 to be equal to two, and that's looking straight at me; right?

A. Yes.

Q. And I'm doing that based on the values of TEMPH?

A. Uh-huh.

Q. And that LOrigMouseH that we stored back in Exhibit 25, Script 5; correct?

A. Yes. That's correct.

Q. So I'm -- in TEMPH we saw up in the third line of Script 6, Exhibit 26, is the current horizontal position of the mouse; correct?

A. That's correct.

Q. So is it fair to say that I'm picking the appearance of this man based on the current position of the mouse and the original position of the mouse, among other things?

A. Yes. That's correct. And as I -- as I read these now, I'm -- my recollection of this is coming back a bit. And it is basically that -- that it would seem like this Prowler is aware of where you're moving the mouse and looking to where you were moving the mouse. So it's kind of like he's spookily sort of following what you're doing on the screen.

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Q. And then below these places where I'm -- the part of the code where I'm selecting which -- which visits -- which -- his face -- the direction his face is oriented, I am adjusting his locV and locH; correct?

A. Yes.

Q. And in that first line, 25, after the end case is the -- the various places where setting the cast member for the -- for the sprite, it sets the locH of sprite 1 equal to TEMPH; right?

A. Right.

Q. Which we saw was the mouse's horizontal position; correct?

A. Right.

Q. But then it sets the vertical position of the sprite to some function of the mouse's vertical position, but potentially offset from it; right?

A. Potentially offset from it, and no further down than 43. So the vertical position, it would -- it would -- which would keep the Prowler from disappearing out of the window completely.

So -- and that apparently was the number 43, was the magic number. I didn't want the -- want the Prowler to disappear all the way down. So he would move up and down, but within limits.

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Q. But -- but within those limits he's sort of tracking the movements of the mouse?
A. Yes, he is.
Q. But he's not under the mouse; right?
A. No, no. The mouse could be off to the right or off to the left, you know, but he would be tracking the vertical location even when the mouse was off to the right or the left.
MR. KELLEY: Okay. Can we go off the record for a second?
THE VIDEOGRAPHER: Off the record at 1:51 p.m.
(RECESS FROM 1:51 P.M. TO 1:52 P.M.)
THE VIDEOGRAPHER: On the record at 1:52 p.m.
MR. KELLEY: All right. I'm marking as Exhibit 27 a file called Prowler.htm.
(DEPOSITION EXHIBIT 27 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. Mr. Bullock, have you seen this file before, Prowler.htm?
A. Yes, I have.
Q. Is this an HTML file that you created?
A. Yes, it is.

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Q. So I noticed that -- that near the top there's a tag that says, "Embed source equals c_prowl.dcr," and then it has some other -- some other attributes. Do you see that?
A. Yes, sir.
Q. What does -- what does that line do?
A. The embed tag gives the name of the file of the Shockwave.dcr file for the browser to go retrieve from the server and gives its dimensions, provides its dimensions and how much vertical space, V space, and horizontal space, should be padding around the -- around the Shockwave.dcr file.
Q. So this will retrieve a DCR file?
A. This will retrieve the -- the DCR file, named c_prowl.dcr.
Q. And then the Shockwave plug-in will play it?
A. Yes.
Q. Okay. And then below that there's a text thing that says the, "Page Prowler."
A. Uh-huh.
Q. And you have some text that says, "This guy sort of wanders around your page and watches your mouse movements very carefully."
A. Yes.
Q. And then there's some more -- a couple more

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embeds; right?
A. Uh-huh.
Q. And those are embedding two more DCR files; am I correct?
A. Right.
Q. And one is L_prowl.dcr?
A. Yes.
Q. And the other is R_prowl.dcr; correct?
A. Yes, uh-huh.
Q. Okay. Now, we were just looking at the code for L_prowl.dcr; correct?
A. Uh-huh.
Q. Okay. So am I correct in understanding that this would load three different DCR files, and I'd have three different animations going potentially on my web page here?
A. Yes. This -- I'm familiarizing myself. I'm reminding myself of what I wrote all those years ago, but --
Q. Yeah.
A. It is basically -- we created a single Director file, and we made a single DCR file, but in order to place multiple copies of the same file on the page you should probably -- we're telling the people name them with three different names.

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Call one of them L_prowl, which would be left. C_prowl, the one in the center. And then R_prowl, the one on the right. But essentially all three of them would be the same -- the same DCR file. They just need to have different names if they're going to -- if they're going to display on the same page.
Q. Got it. Okay. And I see below you have some -- it looks like some explanation of what Shock-Baubles are or how --
A. Yes.
Q. Yeah.
A. Yes.
Q. And you have the same comments about it's free to use, but you'd like attribution if someone puts it on their web page?
A. That's correct.
Q. And you have your contact information at the bottom of the page; correct?
A. That's correct.
Q. Do you remember when this went up on your website?
A. Spring, summer of 1996. And going back and having -- and looking at the file date, which was on one of the earlier exhibits, L_prowl, of 5/23/96.

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May '96 was when we would have made the -- the Shockwave.dcr file. It probably went up on our web page within weeks of that.

Q. Okay. Thank you.

MR. SETH: Is that Exhibit 26?

MR. KELLEY: That's 27. The HTML is 27.

MR. SETH: Sorry. Yeah, 27.

MR. KELLEY: All right. I'm going to ask some questions about Fergie Mouse, which for you, Pradeep [sic], is going to be Mouse1.

MR. SETH: All right.

BY MR. KELLEY:

Q. All right, Mr. Bullock. What is -- what is Fergie Mouse?

A. Fergie Mouse was another one of our baubles that we gave away for free. It was a fun little animation -- you could call it a game almost -- that involved a mouse that would come out of -- I believe there were three or four -- I forget which number of little black mouse holes.

And the mouse would appear as if it was coming out of one or the other and running across the stage and then disappearing into one of the other holes. So it was just a little mouse sort of randomly

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moving around from hole to hole.

MR. KELLEY: All right.

(DISCUSSION HELD OFF THE RECORD.)

MR. KELLEY: Okay. So, Pradeep, we're going to move to the Dropbox -- my apologies -- Fearless Fergie1.

I'm sorry. Sandeep. I apologize, Mr. Seth. I -- I think I mis -- I butchered your name, and my apologies.

MR. SETH: Oh, it's okay.

MR. KELLEY: Yeah.

MR. SETH: I'm sorry. Can you just tell me where you are now?

MR. KELLEY: So it's Fearless --

MS. LI: If you go to your Dropbox --

MR. SETH: Yes.

MS. LI: -- you can -- you can see a bunch of photos. Fearless Fergie. This is Fearless Fergie1.

MR. SETH: And --

MS. LI: You might want to refresh. Sorry.

MR. SETH: No. It's not -- it's not that. I am just not seeing Fearless Fergie. Just give me one second. Maybe I am --

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Oh, yeah. Okay. Fearless Fergie1. I'm seeing it. It wasn't in one of the directories. That's why I got confused. It's in the main. Got it.

MR. KELLEY: Yup. All right. So we're going to mark this as 28.

(DISCUSSION HELD OFF THE RECORD.)

(DEPOSITION EXHIBIT 28 WAS MARKED FOR IDENTIFICATION.)

BY MR. KELLEY:

Q. All right. So Exhibit 28 is a -- is a display of the directory. And, unfortunately, the top is kind of cut off, but I'll represent to you that it's one of the folders in one of the disks that you gave us, Mr. Bullock.

A. Okay.

Q. Do you see the file Mouse1.htm? The -- the big properties window.

A. Oh, I see the properties window. Yes.

Q. Yeah.

A. Yes.

Q. Now, what was Mouse1.htm?

A. Mouse1.htm would have been the web page, the internet page, which contained the Fearless Fergie -- we were -- the file name was Mouse1, which contained

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the Fearless Fergie.dcr file.

Q. Or at least an embed reference to it?

A. An embed reference to it. Right.

Q. Okay. And there's a date here that says this file was created June 24, 1996?

A. Yes. I see that.

Q. Does that sound about right when you created the Fearless Fergie web page?

A. Yes.

MR. KELLEY: Okay. I'm going to move to the next image, Sandeep. So it's -- that's going to be 29.

MR. SETH: Fearless Fergie2?

MR. KELLEY: Sounds right.

(DEPOSITION EXHIBIT 29 WAS MARKED FOR IDENTIFICATION.)

MR. KELLEY: So this is, I believe, what the web page looks like when it's rendered on -- on Netscape.

MR. SETH: Objection to form and foundation.

BY MR. KELLEY:

Q. Mr. Bullock, what is -- what is this that we're seeing here?

A. We're seeing a web page that I, my little

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company, created for one of our Shock-Baubles, which we called Fearless Fergie Mouse.

And this -- at the top of the -- of the screen -- the top of the -- of the page area, not this Netscape interface, but right below that is where our Shockwave.dcr file is.

And now that I'm looking at it, it was three mouse holes, and not four, up there that this little mouse would run between. And go in one and come out the other and then -- you know, randomly run from one to another across the top.

Q. Okay. And I noticed that the cursor here is the standard cursor?

A. That's correct. The cursor is over the web page itself. It is not at this point in time over the Shockwave.dcr animation.

MR. KELLEY: All right. I'm going to give you -- next image, Mr. Seth, we're going to mark as 30.

(DEPOSITION EXHIBIT 30 WAS MARKED FOR IDENTIFICATION.)

BY MR. KELLEY:

Q. So, now, how does 29 -- or, I should say, how does 30 differ from 29?

A. In the case of 30 the user has rolled the --

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has taken the mouse and moved it up, so that the cursor would be inside of our little animation.

But what we have done is we have said to the cursor hide, which means go away. Don't show a cursor. Whatever. And we've replaced the cursor with a little cat head that effectively is -- shows where the cursor is and tracks where the cursor would be if the cursor was visible.

And the other kind of fun thing about this, which I thought was just adorable, is that the cat's eyes would move left and right within its little eye sockets to like look at where the mouse was, as if the cat was like following the mouse around and trying to eat it.

MR. KELLEY: So, Sandeep, I'm going to skip four images ahead, and we will make that 31. Here we go.

(DEPOSITION EXHIBIT 31 WAS MARKED FOR IDENTIFICATION.)

MR. SETH: Does Kay know which one -- is that Fergie 7 or 8?

MS. LI: This is 7.

MR. KELLEY: This is 7. Yeah.

MR. SETH: So the last one was 3?

MR. KELLEY: I believe that's correct.

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I believe that's -- we might have -- I thought we skipped one, but --

MR. SETH: Okay.

MS. LI: No. We didn't skip.

MR. SETH: All right. Well, that's fine.

MR. KELLEY: No. Kay says it's 3. Kay says it's 3. My apologies.

BY MR. KELLEY:

Q. All right. So, now, there's a difference, obviously, here. And between 34 and 30 I don't see the text underneath it.

Can you -- do you see why that might be? This is all a little confusing.

A. Yes, I do. If you look up in the -- in the Netscape address bar, next to, "Location," the location is listed as -- the ending part of it is, "Mouse1.dcr."

So it's not displaying the page Mouse1.htm, which is what the previous exhibit showed, but it's showing the Shockwave.dcr file all by itself.

Q. Okay. Now, you mentioned earlier that the cat's eyes moved?

A. Yes.

Q. So, now, do I see that in the comparison

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between 34 and 30?

A. Yes. The cat's eyes were looking to our right, our viewer's right, in -- in the first Exhibit 30, and now they're looking to our left in Exhibit 31.

Q. I notice that his mouth is also opened.

A. Yeah. I had forgotten that, but that's true too. It's like he's getting hungry there. That was -- it was a -- I had a good artist. He was good at this stuff.

Q. So, now, does the -- what does the cat -- what did you program the cat's eyes to be looking towards?

A. Looking towards the mouse.

Q. Okay.

A. And --

MR. KELLEY: All right. So we're going to go -- Sandeep, we're going to go back into -- into the Mouse1 folder with the text files and so forth. And I'm going to mark this as 35, and this is Cast.bmp.

(DISCUSSION HELD OFF THE RECORD.)

(DEPOSITION EXHIBIT 32 WAS MARKED FOR IDENTIFICATION.)

MR. KELLEY: So I misspoke. The

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Cast.bmp is going to be Exhibit 32.
BY MR. KELLEY:
Q. All right. So what do we see in Exhibit 32?
A. This is the -- Exhibit 32 shows the authoring environment in Macromedia Director. On the right-hand side is what's called the cast.
And in the middle of the -- of the screen, blocked out a little bit by the cast, is the stage, the animation area for the -- for the -- for the Director file.
Q. Now, when you said blocked out by the cast, the cast is blocking out the stage; correct?
A. A portion of it. The right-hand portion of it. We can only see two mouse holes here, and we know from the previous exhibit there were actually three --
Q. Okay.
A. -- in the animation.
Q. And I see different -- I see five different images of the cat and a bunch of different images of the mouse; right?
A. That's correct.
Q. Okay. So I have cast members to allow the cat to look to the left and cast members allowing it to look to the right, and then some -- one that allows him to look straightforward?

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A. That's correct.
Q. And, likewise, I have a bunch of cast members that allow the mouse to move to the right or left?
A. That's correct. And to stand. There are a couple of them, STANDRT -- RT1 is standing facing right and standing facing left, STANDLT1.
Q. Okay. And, in fact, one of the things the mouse can do is eat the cat; right?
A. Yes.
Q. So you have a bunch of images of the mouse with his jaws open, some menacing-looking fangs inside it, and that was how he ate the cat; right?
A. That was the -- so that was the fun surprise here, is the user would take his mouse up and move his -- and -- and when the mouse got inside of our animation, then the mouse disappears.
It becomes a cat head. And you think, oh, the cat is going to chase the mouse. And the cat sort of does chase the mouse. But then when the mouse gets tired of the mouse -- or the cat chasing it, it turns around and eats the cat.
Q. But, now, the cat only chases the mouse if I move the mouse -- if I move the computer mouse -- I knew this was going to get confusing.

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A. Yeah.
Q. If I move the computer mouse, that's where the cat head moves; right?
A. That's correct.
Q. Okay.
A. The cat head tracks the computer mouse location.
MR. KELLEY: All right. Let's mark as Exhibit 33 -- excuse me. Let's mark as Exhibit 33 Script 34.txt.
(DEPOSITION EXHIBIT 33 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. Mr. Bullock, have you seen this before?
A. Yes. I have seen this before. I was just familiarizing myself with what it did.
MR. KELLEY: Sandeep, did you say something, because it was very faint?
MR. SETH: I apologize. I thought I had lost audio. My bad.
MR. KELLEY: No. We can hear you.
THE WITNESS: Yes. I am familiar with this.
BY MR. KELLEY:
Q. Okay. So what does -- at a high level what

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does this script do?
A. At a high level this script -- you have an enter frame and an exit frame. And every -- and a Director movie has a number of frames. You know, the 30 frames per second thing.
And the enter frame and exit frame -- the exit frame says loop. Go to the frame -- press and frame minus one. And then the frame head returns. So it loops over and over again.
And then this is -- I used a different handler here that's called an, "on idle." And that is if you're to look at a frame that takes a 30th of a second, for a quick instant it -- it executes the enter frame.
And for another instant at the very end of that 30th of a second it -- it executes an exit frame. But in between the enter frame and the exit frame it will -- it will execute an on idle as fast -- as many times as it possibly can.
So you put an idle function in there when you want it to be checking lots and lots and lots of times. And the on idle is in this frame script the critical thing, because it basically says if the mouse is within the bounds, give or take 20 pixels to the left of or 20 pixels to the right of or 20 pixels

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above or below, or 80 pixels -- anyway, if -- if the cursor is within the animation, then hide the cursor altogether, which is what cursor -- the command cursor at 200 does.

It hides the -- the system's cursor, the Microsoft or the Apple cursor, makes it disappear. And in frames scripts in -- in lines number 24 and 25, set the loc of sprite 9 to the location of the mouse, the mouseH and the mouseV, the point -- the mouseH and the mouseV.

So it says set the location of sprite number 9 to that. And then it says -- and then there's a command, set the cat face to the mouseH and the -- set the cat face, and you pass at two variables, the mouse horizontal position and the location of sprite number 10.

Q. Okay. So I want -- the line above, you mentioned mouseH and the mouseV. Those are the locations of the computer mouse in the animation; correct?

A. Yes. And even though you've hidden that computer mouse --

Q. Yup.

A. Okay? So that it's not visible to the user of the computer, there -- it has still got a location.

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The computer knows that the mouse is in a certain location on the screen.

So that if you unhit it, that's where it would appear. So you can still check its location, even though you're hiding it.

Q. And I'm setting the location of sprite 9 --

A. Uh-huh.

Q. -- to be equal to the location of the computer mouse; correct?

A. Yes.

Q. Line 24?

A. Uh-huh.

Q. Okay. And what's the -- what -- for the -- for the person who is viewing the animation, what is sprite 9? What is that line doing?

A. Sprite 9 is -- is -- I'm -- I'm believing that sprite 9 is the cat face.

MR. KELLEY: Okay. And then the next -- the next line, line 25, Sandeep, is the line directly below that begins, "SetCatFace."

BY MR. KELLEY:

Q. I'm calling that function SetCatFace that you mentioned; correct?

A. Yes.

Q. And you said I'm passing at two things. One is the location -- horizontal location of the -- well, you tell -- tell us what the two things are again.

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A. One is -- it's passing two variables. One is the mouseH. And the mouseH is the horizontal location of the mouse.

Q. Computer mouse?

A. Of the computer mouse. It is hidden. It still has a location. And the other is the horizontal location of sprite 10, and sprite 10 would be the mouse.

Q. And --

A. Is the mouse -- the animated mouse. Oh, gosh, yes. It is -- it is this little animated mouse that's running all over the screen. Is it right of -- you know, you want to know its horizontal location.

Is it right of the cat face or is it left of the cat face? So that you can change the cat's face to face it. You know, the eyes to track it sort of thing. So that's why you're sending these two variables to the -- to the programming function SetCatFace.

Q. So that will change which cast member I'm using as the current visible cursor?

A. Yes. If -- if we were to go back -- and I'm going to refer -- yes. You're absolutely correct. If I was to go back to the previous Exhibit 32, it will set the cat face to one of those five; CatLeft, CatLeft2, Cat1, CatRight2, CatRight1. One of those five cast members --

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Q. Okay.

A. -- graphics. Uh-huh.

(DISCUSSION HELD OFF THE RECORD.)

MR. KELLEY: All right. So, Sandeep, we're going to move on to Haunt, but I'm first going to talk about the image files that are in the Dropbox. Okay?

MR. SETH: Uh-huh.

MS. LI: Sandeep, they're called Halloween Haunt, the images.

MR. SETH: They're called -- what?

MS. LI: Halloween Haunt.

MR. KELLEY: Did you catch that?

MR. SETH: Yes.

MR. KELLEY: Okay. Great.

BY MR. KELLEY:

Q. All right. So, Mr. Bullock, do you remember the Halloween Haunt game you mentioned earlier?

A. Vividly. It was one of my favorites, I mean, back at the time. Yes.

Q. So what made it your favorite?

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A. Cute graphics, good motif, good -- good interactivity. People liked it a lot, you know.
Q. How did you know people liked it?
A. We all -- it was probably one of the most sophisticated things we ever offered for free. And around Halloween, you know, people would -- I would say it got up on somewhere between 50 and 150 websites.
Q. Uh-huh.
A. You know, people put up their own Halloween websites with -- they'd go get graphic -- this is the early internet days. People would go get graphics of spooky pumpkins and this -- and make lots of pictures and stuff. And this was cooler than almost anything else they could find for free on the Internet. So on a lot of websites.
MR. KELLEY: Okay. So I'm going to mark as Exhibit 34 the first image 1, Sandeep.
(DEPOSITION EXHIBIT 34 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. So, Mr. Bullock, once again, I'll represent to you that this is an expansion of the Haunt1.htm file that was on the -- one of the disks you sent us. Do you see the date there?

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A. Yes, I do. In the properties dialogue box. Yes.
Q. And the date is March 1, 1997?
A. That's correct.
Q. Does that comport with your recollection of when you wrote the Haunt?
A. That would comport. I think it -- I think most of the game was actually written earlier than this, but, of course, the date -- you know, it says, "Created," and, "Modified," you know, and they're -- they're absolutely the same.
I think that it was actually created a little earlier than this, but this was probably the last time that file was saved.
Q. And so the last time the file was saved, that means that you put it up on your website around that time or --
A. Yes.
Q. Okay. So you mentioned earlier that you had a lot of uptake with people putting -- creating Halloween sites. That would have been sometime after this?
A. That would have been in the fall of -- of '97. Probably -- you know, I mean, people put it up earlier than Halloween, but it just got really hot,

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some -- some buzz about it. You know, as I say, people were doing goofy web pages back then.
Q. But, as far as you remember, it was on -- available on your website?
A. Oh, yes. Oh, yes.
Q. And this time --
A. Oh, yes.
Q. -- in March 1 --
A. It was -- it was earlier in the year, but I mean we didn't create it just in time for Halloween. We created it much earlier in the year. It just got very popular at the -- at the Halloween --
Q. Do you remember how soon after March 1 you would have put it up on your website?
A. Almost immediately.
Q. Okay.
A. You know, we were -- we were -- when we -- when we were finishing the baubles and the -- and the free things that we were giving away, we weren't waiting around for some magic place to put it up.
We were like -- we were like putting it up almost immediately, because it was -- it was -- as I say, it was a race back then to have the coolest stuff on the web pages, and that was how we got known.
Q. So it's your belief that it would have been

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up on your website by the end of March?
A. Oh, yes.
MR. KELLEY: Okay. I am going to move on to the next image, and then we're going to mark that as 35.
(DEPOSITION EXHIBIT 35 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. All right. And so what are we looking at in 35?
A. This is the -- this is the web page that was on the Adveractive website, displaying the Haunted game. And this was effectively the opening screen to the game.
I see that we used a little coffin shape for our buttons. And I see the little continue coffin shape over on the right-hand side, and -- so this would -- this would load up, and this would be the first screen that -- that -- that people would see.
Q. And I see you've -- you've got your -- your company name there --
A. Uh-huh.
Q. -- right in the middle of the animation?
A. Yes, we do. Uh-huh.
Q. And I notice that further down this website

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you're -- you're advertising your other games as well?
A. Yes. We had -- our advertising Shock Bowl, our bowling game, and -- and other games, Memory Builder. Oh, I had forgotten about that one. Yeah.
MR. KELLEY: Okay. So let's move on to the next image. Actually, you know what? Let's move on to -- well, no. Let's go ahead and move on to the next image, which will be 36.
(DEPOSITION EXHIBIT 36 WAS MARKED FOR IDENTIFICATION.)
MR. KELLEY: So this is 3, Sandeep.
MR. SETH: I'm sorry?
MR. KELLEY: This is 3.
MR. SETH: Right. Okay. And it's -- uh-huh, got it.
BY MR. KELLEY:
Q. So -- and 36, Exhibit 36, the cursor has been moved into the -- into the .dcr region; right?
A. Correct.
Q. But I still have the system pointed arrow cursor?
A. Yes, you do. Uh-huh.
MR. KELLEY: Okay. I'm going to skip ahead to 5. We'll make that Exhibit 37.
(DEPOSITION EXHIBIT 37 WAS MARKED FOR

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IDENTIFICATION.)
BY MR. KELLEY:
Q. So now I'm over an object on the screen. What is that?
A. Oh, that's a pie.
Q. Okay. What was the -- what was the -- how did this game work?
A. The game worked -- and it's really -- it's too bad that the whole top area of the game is so dark, because it was really -- there were -- it was a carnival game.
It was as if you were in a shooting gallery in a carnival, and lines of like little bats and skeleton heads and other like little ghostly figures would move left and right across the top at different speeds -- or a whole -- the line would run at different speeds, each of the three lines.
And you would try to pick up a pie and toss the pie, which would go splat. And you'd try to hit one of those things that was moving up at the top of the screen as if you were throwing. So it's like a shoot -- a combination shooting gallery, pie throwing game.
Q. Okay. And that -- so the -- so the orange puffy thing underneath the cursor is a pie?

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A. That's the top of a -- it's the crust of a pie. Yup.
MR. KELLEY: Okay. We're going to move on to image 6, which is going to be 38.
(DEPOSITION EXHIBIT 38 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. So what's happened, and how is 38 different from 37?
A. All right. In frame -- in Exhibit 37 the mouse cursor is the default windows, you know, system cursor. The regular pointed arrow.
But when you mouse down, which is click the mouse and hold the mouse button down on the pie top, the pie would change, as you see in Exhibit 38. And the cursor would immediately disappear.
And the cursor would be effectively replaced by the hand, which is now holding the pie, and holding it as if it's going to throw the pie.
Q. Did the -- did the hand and the pie move at all?
A. Yes. As you would move -- the pie -- if -- my recollection, the pie would not move very much vertically, but the pie would move horizontally.
So that as you moved your -- your -- if the

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player moved his cursor left or right on the screen, the pie and the hand would move left or right. And that would allow you to track what you were throwing at.
And you tried to sort of track and match the speed before you released the -- released the pie and threw it. And you would release the pie and throw it by letting go of the mouse.
So the action would be it's a regular system cursor until you click on the pie, and then it becomes a hand and a pie. And as long as you hold down the mouse it stays a hand and a pie.
But when you release the mouse button, then that basically said throw the pie. And the pie would -- would take off in space and head down to hit one of the objects that's moving there.
MR. KELLEY: All right. So, Sandeep, I'm going to move to the -- to the folder with the text files and the cast members, et cetera.
So we're going to make Exhibit 39 -- 39 is going to be a document that has both Cast.bmp and Cast2.bmp in it.
MR. SETH: This is under the directory Haunt, Kay?
MR. KELLEY: You got it.

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MR. SETH: All right.
(DEPOSITION EXHIBIT 39 WAS MARKED FOR IDENTIFICATION.)
MR. SETH: I'm sorry. Which one?
MR. KELLEY: Cast.bmp and Cast2.bmp.
MR. SETH: Are those both one exhibit?
MR. KELLEY: They're the same -- yeah. They're just two different pages in the same Exhibit 39.
You got it?
MR. SETH: Uh-huh.
MR. KELLEY: All right.
BY MR. KELLEY:
Q. Mr. Bullock, what is Exhibit 39?
A. Exhibit 39 is the authoring environment, where you create a Macromedia Director file. The file being created here is the Haunt1 Director file. And the main square in the middle of this first screen capture is the cast, showing the cast members.
Q. Okay. And since they didn't all fit down on one page, I dragged the side vertical cursor and captured it twice.
A. Uh-huh.
Q. Which is the second page.
A. Uh-huh, uh-huh.

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Q. So I see early in the cast -- I'm not sure the exact numbers. I guess we'd have to count, but there's a Piesit and Pieback and Hand Back and Hand Up?
A. Yup. I see those. Yes, sir.
Q. And are those the -- the -- do those include the cast members that you used to represent the current location of the mouse when you're -- or to track with the mouse, I guess, since you said they didn't move up or down, but horizontally?
A. Yeah. The -- the Piesit was the stationary pie before you clicked on it.
Q. Okay.
A. The Pieback would have been the -- the pie after you -- after you clicked on it. And the Hand Back would be the graphic of the hand holding the pie, which would actually be sitting in front of the Pieback. Those two would kind of combine up together to look like a single object.
If I remember, the Hand Up is after you've thrown the pie. When you release the mouse, that Hand Up would stay there as if you just -- just tossed it and your hand was stopped after throwing the pie.
Q. And I see a sequence of images that start Pie1.

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A. Uh-huh.
Q. Go all of the way through Pie12. And then there's a Splat1 and a Splat2?
A. Right.
Q. What are those?
A. Those are the -- those are the pies moving in space towards the wall that you're throwing at the wall that contains the -- the Frankensteins and the Draculas moving back and forth.
And the -- that is the pie getting gradually smaller as it heads to the -- to the wall. And, you know, it would go through that whole sequence of images from largest to smallest.
And they don't look like they're getting that much smaller, but they really are. And then the splat is what would be left on the wall after the pie hit either the wall or one of the items moving on the wall.
Q. All right.
A. And if you were really good, I remember there was a little witch that would fly around in there too. And hitting the witch was the hardest part. And the witch was worth the most points. And she would fly around. She wasn't attached to the back wall.

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MR. KELLEY: Got it.
All right. We're going to make Exhibit 40 the Script 98.txt.
(DEPOSITION EXHIBIT 40 WAS MARKED FOR IDENTIFICATION.)
BY MR. KELLEY:
Q. So, Mr. Bullock, I'll represent to you that this is the Lingo code from the script that's Cast Member 98.
A. Uh-huh.
Q. And it says at the top, "Parent Pie Script." Do you see that?
A. Yes, I do.
Q. So do you recall what's going on in this script or what generally this script does?
A. Yes. This is the script that has most all of the programming code to control the -- the picking up of the pie and the -- the throwing of the pie at the -- at the spooky things.
Q. Okay. So there's a bunch of functions in this script; correct?
A. Yes.
Q. And the first one is -- it says, "On birth." It's the birth function; right?
A. Yes.

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Q. And then the next one is, "On GrabPie"?
A. Uh-huh.
Q. And it takes some value me; right?
A. Yes. Me -- you know, Director had what they call parent scripts and child scripts. And, you know, me was a term -- it was like an object variable that this is the first time we've looked at a parent script.
So the, "me," just is sort of a self reference. You know, you could -- you could create, you know, many children from a single parent, but this is -- the, "me," is just a self reference -- object reference within the script.
Q. Okay. So the first line in, "On GrabPie," is, "Set myCast equal 19"?
A. Uh-huh.
Q. So what is -- do you know or do you remember what's going on here?
A. Yes. And I can -- if we refer back to the previous exhibit, Number 39, "Set myCast equals 19."
If we go into the cast, number 19 -- I'm just counting, because some of these are numbered and some aren't, but counting back from 22, 21, 20 -- 19 is the cast member named Pieback.
So set myCast equals 19 means set -- that's

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a -- 19 is a reference to myBack. And then set -- the next line, "Set the castNum of sprite mySprite," which is -- which is the pie sprite. Set -- its cast member to Pieback.
So that -- basically when you grab the pie, the pie changed from the Piesit graphic to the Pieback graphic.
Would you like me to continue explaining?
Q. Sure. Yes.
A. Okay. There was another sprite, which is not, you know, mySprite. And it's a specific sprite named 39. And it says, "Set the cast number of sprite 39 equals 20."
Well, 20 is Hand Back. Okay. And I'm -- I'm referring to Exhibit Number 39 again. That's -- Hand Back is cast member number 20. So you're basically setting the cast -- the graphic of that sprite to Hand Back.
And you set the location of Hand Back to the same location as the pie. So now the hand looks like it is holding the pie.
Q. Okay. And -- so this is -- when would on GrabPie be executed?
A. There is -- there is likely another -- another piece of code, and it would be in a -- in --

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attached to the sprite itself, which would have a mouseDown and a mouseUp.
And probably on -- it would say on mouseDown GrabPie, you know. And then -- and then later on on mouseUp, when you release the mouse, it would say ThrowPie.
Q. So --
A. But that isn't a part of the parent script. That is -- that is -- that is likely in a separate script attached to the sprite.
Q. Got it. And the function you mentioned, ThrowPie, is the next function that we see here in -- in Exhibit 40; correct?
A. Yes.
Q. Okay. And so what is -- what is ThrowPie doing generally?
A. ThrowPie is the trigger for having the pie like leave -- leave the location of the mouse and fly toward -- look like it's flying away from you.
And is -- and somewhere in here we're -- we're doing a lot of switching of cast members, so that it looks like the -- like the pie is moving away from you. Getting smaller and smaller visually as it moves, you know -- well, that's ThrowPie.
I'm sorry. ThrowPie is that second. You

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know, where it is being released. Because I see, "FlyPie" -- "FlyPie," on the next page. And FlyPie is what changes the cast member as it's flying towards the -- towards the wall -- or towards the objects.
Q. Okay. So I wanted to ask you -- you'll see there is a variable that gets passed to this ThrowPie function called WHICHNUM.
A. Uh-huh.
Q. And if you look down in this function, there's various -- it's doing different things based on the value of WHICHNUM. So at line 44 --
MR. KELLEY: And this is the line, Sandeep, that says, "Else if WHICHNUM equals three, then" --
And then 47, there's another comparison to, "WHICH" -- "if WHICHNUM is equal to four." Anyway, there's a bunch of those.
BY MR. KELLEY:
Q. It's doing different things based on the value of WHICHNUM; correct?
A. Yes, it is. And I'm not sure I'm exactly -- I honestly have to look at -- at -- at -- at the script, which is calling ThrowPie to see what is really being referenced there in WHICHNUM. It obviously is changing some things on the location.

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I know what -- I know what it is. I know what it is. Okay. I think WHICHNUM had to do with the speed at which you were moving the mouse vertically.

So that -- so that you're holding the pie in your hand. And you can't -- the pie goes left and right with you. But then if you want to throw at something high up on the far wall, you might like move the mouse up as you were releasing it, and that would throw -- make the throw go higher.

Or not move the mouse up, in which case the throw would kind of droop and not make it to that back wall. And I think the WHICHNUM probably had to do with -- with the vertical movement of the mouse.

Although, I really need to see the other script to be sure of that, but that's -- that, I believe, would probably be the case.

Q. Okay. So if you look at -- under the set of instructions that are under, "Else if WHICHNUM equals four."

A. Uh-huh.

Q. Read down those lines. The first one says, "Set myCast equals 39."

A. Okay.

Q. And then there's another, "Set the cast

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number of sprite equals myCast."

A. Okay.

Q. And then I'm setting the location of that sprite. And then there's a line that says, "Set the castNum of sprite 39 equal to 21"?

A. Uh-huh.

Q. So what is sprite 39?

A. Oh, from earlier on -- I'm going back to the GrabPie. 39 is -- is the hand.

Q. Okay. And so that's the thing that's tracking the mouse movements at least horizontally --

A. Right.

Q. -- correct?

A. Right.

Q. And when I set that -- when I have that line there at line 51 that says, "Set the castNum of sprite 39 equal 21" --

A. Uh-huh.

Q. -- what am I -- what am I setting the hand appearance to?

A. To the -- what's back in Exhibit Number 39. It's the Hand Up -- Up. It's -- rather than the hand holding the pie, it's the hand up, as if it's just thrown the pie.

So if WHICHNUM equals four, basically we're

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setting the -- we're setting the hand to being the one as if it has just released the pie and started throwing it.

Q. Okay.

(INTERRUPTION IN THE PROCEEDINGS.)

THE WITNESS: Oh, I can't take it.

BY MR. KELLEY:

Q. Okay. So, now, then if you look down at the -- further down in this thing, it says, "if" -- "else if WHICHNUM equals six then;" do you see that?

A. Yes, I do.

Q. Okay. And there's a line there that says -- do you see the fourth line underneath there that's line 62 in the printout, it says, "Set myCast equal to 40"?

A. Yes, I do.

Q. And then the next line says, "Set the castNum of sprite mySprite equal to myCast"?

A. Right.

Q. So what is -- what is sprite mySprite and what is -- what's happening in that line?

A. Well, setting myCast equals to 40, I'm looking at cast member number 40 of here -- gosh, these are -- it's hard to tell without the numbering.

I think -- I think the 40 is Pie2 in -- in

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the cast.

Q. Okay.

A. So it's setting -- it's setting the sprite number of the -- of the pie sprite. You know, the one that's going to move through the air to a particular cast member, and the cast member is -- I believe it's Pie2.

Q. Okay. So your understanding of that line is that mySprite refers to the pie sprite?

A. Yes, yes. And this whole mySprite throughout this script is -- is the pie -- pie -- you know, because this is the parent pie script, and mySprite would be the pie.

Q. Okay. But -- so lots of things are happening based on the fact that I've thrown the pie or the pie is flying --

A. Right.

Q. -- in this script?

A. Right.

Q. But mySprite is -- when I make changes to mySprite, it's -- I'm changing the appearance of the pie?

A. You're changing the appearance of the pie. And when you -- we changed sprite 39. 39 is the hand.

Q. Got it.

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A. So you've really got two things involved here, but -- but, yup.
Q. So the same script is changing the appearance --
A. Of both.
Q. -- of both?
A. Uh-huh.
Q. Okay. Now, do you see the line underneath -- that's two lines underneath the, "Else if WHICHNUM equals six." So there's line 60 in the exhibit.
A. Uh-huh.
MR. KELLEY: Sandeep, it's the line that says, "Set the loc of sprite 39 equal to point." And then there's a set minus 800, minus 800.
THE WITNESS: Yeah.
BY MR. KELLEY:
Q. What's happening there?
A. Well, you have -- your animation is a rectangular box on the screen.
Q. Uh-huh.
A. Okay. And everything inside of that, all of your sprites inside of there, are visible. A quick and easy way if you want to hide something completely,

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but not kill the sprite. Not -- like have the sprite not be there, but if you wanted to hide it, minus 800, minus 800 will be a point like way up here off the screen.
Okay? So it's basically saying set that sprite, which is the hand sprite in this case, let's get rid of the hand altogether. Let's just shove it off the stage so nobody can see it anymore.
Q. So as far as the user could tell --
A. It makes it disappear. The hand disappears.
(COURT REPORTER'S CLARIFICATION.)
THE WITNESS: Sorry.
BY MR. KELLEY:
Q. So -- so, as far as the user can tell, the hand is gone right?
A. The hand has disappeared. Yes.
Q. Okay. But you didn't kill it. What was the programming reason for not killing it?
A. The programming reason for not killing it is you want the -- you want the hand to reappear in a few seconds later after -- to get ready for the next throw.
MR. KELLEY: Okay. All right. Let's go off the record briefly.
THE VIDEOGRAPHER: Off the record at

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2:47 p.m.
(RECESS FROM 2:47 P.M. TO 2:55 P.M.)
THE VIDEOGRAPHER: On the record at 2:55 p.m.
MR. KELLEY: All right. So I'm going to mark as -- I think we're up to 41. Exhibit 41 -- an exhibit that was produced during your earlier deposition.
So, Sandeep, this is Exhibit 2 from the original Bullock deposition.
And, unfortunately, it's loose. So let me get a -- all right.
MR. SETH: Well, let me see something here.
(DEPOSITION EXHIBIT 41 WAS MARKED FOR IDENTIFICATION.)
MR. SETH: I'm not seeing an Exhibit 2 in the Zip folder -- oh, yes, I do. Yes, I do. I'm sorry. My bad.
MR. KELLEY: No problem. I can also give you the Lexos production number, if you want.
MR. SETH: No. I have it.
MR. KELLEY: Okay. Yeah. Since it was produced in litigation, let me go ahead and read

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the production numbers into the record. It's marked as Lexos 60593 through 60608.
BY MR. KELLEY:
Q. All right. Mr. Bullock, do you recognize what this is?
A. This is a -- a -- a report, is what Intuit QuickBooks would call it. This is a report printed out, a QuickBooks program that I used back then and still use to this day.
And from the date in the upper left-hand corner, I would assume that it was -- not assume. I believe that it was printed on 3/18/98.
This would typically be one of the reports that I would print out in preparation for handing over my bookkeeping to -- to my accountants to do my taxes, to do the Adveractive taxes.
Q. Okay. And what program did you use?
A. Used Intuit, I-N-T-U-I-T.
Q. You said, "QuickBooks," didn't you?
A. QuickBooks. Yes.
Q. My apologies.
And did you enter all of this data that's in here?
A. Yes.
Q. All right. So, now, if you look on page

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four of this exhibit, you have an account that's labeled, "Accounts receivable - trade"?
A. Yes.
Q. So what's -- what is, "Accounts" -- what fell under, "Accounts receivable - trade"?
A. Money that was owed to Adveractive by -- by clients who -- for whom we had done work.
Q. Okay. And I see a bunch of clients on here. InfoPlus, Coke Japan being prominent among them?
A. Uh-huh.
Q. I also see on the next page Brunswick, Inc. shows up.
A. Yes.
Q. And you're the one who entered these various dates in the date column; correct?
A. Yes.
Q. Now, are these when you send bills out or what -- what do those dates correspond to?
A. Those would have been the invoice dates. Yes.
Q. And I also see there's some items that are enumerated as payments in the left-most column.
A. Yes.
Q. Are those the dates that you received payment for invoices?

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A. Yes. And the easiest way you can tell the difference, besides the fact that one says, "Invoice," and the other says, "Payment," is that all of our invoices, if you get over to the amount, the second column from the far right, all of the payment -- all of the invoices are positive numbers, and all of the payments are -- are negative numbers, which is money we've received.
So accounts receivable would go up with a positive number. Like we billed somebody another $5,000. We'd have more accounts receivable. But once they paid it, the accounts receivable would go back down by a like amount, and, therefore, that payment would be a negative number.
Q. So if I'm understanding you correctly then, the first item under this accounts receivable is -- is on January 9, 1997, and it's a payment of $9,890; is that -- is that correct?
A. Being a negative number, it's a payment. And because this is a report for 1997, the original invoice for that payment would have been in December of 1996, and, therefore, not appear on this report, but the actual payment to us would have been in 1997.
Q. Okay. And then if I turn to this next page, page five, which is production number Lexos 60597, I

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see some payments from Brunswick. Do you see that?
A. Yes, I do.
Q. And those are payments on 3/25/97 and 4/30/97. Do you see that?
A. Yes, I do. Uh-huh.
Q. Okay.
A. Yup.
Q. And they're in the amount of $3,000 each?
A. Yes.
Q. So you made a little bit more than --
A. I made a little -- it was a little charge. Gosh, we -- it sure was an expensive game, you know.
Q. But am I correct that this is -- these are payments for the Brunswick --
A. Yes.
Q. -- bowling game?
A. This is the Brunswick bowling game, right here.
Q. Okay. In fact, there's some other payments down below later in August and September. Do you remember what that was for?
A. Yes. There was a second Brunswick game. The first one was very popular. They liked it a lot. They came back and said, we have -- we have another new ball called the Attitude bowling game.

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And the Attitude game was signified by a barking -- a barking like -- like German shepherd dog going absolutely crazy, you know. And he -- because the dog had an attitude.
So we did an Attitude bowling game. Completely separate game. Used a lot of the same code, but -- but it had a different look. And we did that later on in the year.
MR. KELLEY: Okay. All right. I want to introduce Exhibit 37. Exhibit 37.
THE WITNESS: 41?
THE VIDEOGRAPHER: Uh-huh.
MR. KELLEY: So this is going to be the document that has production numbers LEXOS 60090 through 60093.
THE COURT REPORTER: What would you like it marked as?
MR. KELLEY: 42.
MR. SETH: I'm sorry. Is it previous Exhibit 42 you said?
MR. KELLEY: No, no. It's our Exhibit 42. It's previous Exhibit 38, confusingly.
THE WITNESS: 37.
MR. KELLEY: I'm sorry. 37.

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Did I -- did I give you the wrong one?
THE WITNESS: I don't know. You can take a look at it.
MR. KELLEY: Well, I guess I should, shouldn't I?
No. This is it.
Okay. Do you have 37?
(DISCUSSION HELD OFF THE RECORD.)
MR. KELLEY: All right. So I'm not sure if I -- the numbers I read into the record were correct, but this is going to be 42. It's previous Exhibit 37. The production numbers are 60090 through 60093.
THE WITNESS: Is it the same as this?
MR. KELLEY: That's it.
THE WITNESS: Okay.
(DEPOSITION EXHIBIT 42 WAS MARKED FOR IDENTIFICATION.)
MR. KELLEY: Sandeep, you there?
MR. SETH: Yeah.
MR. KELLEY: Okay. Great. Apologies about the confusion.
BY MR. KELLEY:
Q. All right. Mr. Bullock, what is Exhibit 42?
A. This exhibit is a -- a letter that says --

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it actually explained -- I explained in the first paragraph, I sent as an e-mail and also as a fax, so that they'd have a hard copy, to a Mr. Charlie Schmitz.
And Charlie Schmitz was the tech person. He wasn't the salesperson. The salesperson was Phillip. But the tech person at Ackerman McQueen, the advertising agency, was Charlie Schmitz.
And these were my instructions to him as to how to create the HTML page and to stage the files, so that the bowling game would run on their website. It also contained other instructions on external text files that they could alter and things of that nature.
In other words, this was kind of like a, here is how you actually put the game up on bowl -- on Brunswick's web page. And it's me telling them how to do it.
Q. And this letter has a -- or fax. I'm not sure how you sent it. It has a date of March 31, 1997?
A. Yes.
Q. Is -- is that when you sent this letter?
A. I believe so.
Q. Okay. Was the game done at this point?
A. Yes.

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Q. So it's ready to go, and you're telling them how to put it up on their website; is that fair?
A. Yes.
Q. And, in fact, you -- at the last page here, it's page three of your letter and production number 60093, you tell them, here is some HTML code you can use to -- to host this game; right?
A. Yes.
Q. And it has -- it will display. And the second line of this HTML, it says, "Title, Brunswick Cosmic Web Bowling"?
A. Uh-huh, yes.
Q. And then you have some -- down -- oh, a significant way down, but there's an embed tag; right?
A. That's correct.
Q. And that gives the source for the -- for the Shockwave file as brun_pre.dcr?
A. Yes.
Q. So, now, what is -- what is the brun_pre.dcr file?
A. The -- Shockwave files have the ability to load another Shockwave file. Back in that day, when we were doing this, I believe that -- and we could look somewhere, but I believe that our bowling game was a -- was a gigantic 200 K, 250 K file.

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And at the time that would take 30 seconds to load. And the general thinking then was that anything that took 30 seconds to load, people wouldn't stick around, that they would click and go off to another web page.
So what we would do is we would create what we called a pre-file. And it would be -- like instead of 250 K, it would be a five K or a six K file that would load immediately and show like a loading bar or some sort of status or it would simply say, loading, and it would kind of flash, so that the user would know that something was happening and something was coming on the screen.
And this brun_pre would be the pre-movie, the loader movie, for the main game. And that's why this was called -- and that -- that is somewhat -- that's back -- as a matter of fact, explained on the first page of the document, brun_pre, this is the Shockwave pre-movie with the stars that loads first and calls the actual game.
And then br_bowl.dcr, this is the Shockwave game itself. So that's -- that's what this all was.
Q. And when you say, "calls the actual game," what's happening there?
A. The pre-movie is loading the main game.

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Call. It's going back to the server and saying, send me down this next file. And when that next file gets all of the way down, it replaces the pre-movie. The pre-movie disappears, and now the main game is ready to run.

Q. And did the main game have -- was there some kind of visual interest that was presented to the user?

A. Yeah. It says -- and I just -- I'm trying to remember what the pre-movie looked like. It said, this is a Shockwave pre-movie with the stars. And we were doing something there, twinkling stars.

I don't know -- I don't remember really exactly what it was, but it might have said the wording loading and had some twinkling stars in there.

Q. Some kind of indication to the user that don't give up?

A. Don't -- don't -- just wait a few seconds. There's something coming.

Q. Okay. Now -- so if the user -- let me strike that.

If Brunswick puts up on their web page the HTML -- or on their server, rather, the HTML that you gave them here on page three, and someone goes ahead and clicks through to that HTML, however they get

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there --

A. Uh-huh.

Q. -- the -- and if I remember your earlier conversation, their -- their browser is going to go out and get this HTML code from the Brunswick server; is that correct?

A. Yes, it is.

Q. And the web browser then is going to interpret those embed statements and go and get the pre-game; is that correct?

A. That's correct.

Q. And that will also be from Brunswick server?

A. Yes.

Q. And then when that Shockwave pre-movie runs, if I understand correctly, what you said is that the Shockwave pre-movie is going to go ahead out to the server and get the actual game itself; is that correct?

A. Correct.

Q. And the pre-movie had some kind of image files in it?

A. Something very simple. I mean, something -- again, because, you know, it didn't have any fancy -- super fancy graphics, because you wanted the pre-movie to be as small as possible to appear immediately.

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Q. It had some kind of code to -- some Lingo code to --

A. Yes, it did.

Q. -- retrieve --

Let me finish this one, because this one is important.

A. Uh-huh.

Q. It had some kind of Lingo code to retrieve the next -- the -- the full game DCR?

A. Yes, it did. Uh-huh.

Q. Okay. And then the full game DCR had images; correct?

A. Yes, sir.

Q. And it had Lingo code; right?

A. Yes, sir.

Q. Okay. Did you go out to Brunswick's page to see this -- see your game running there?

A. Yes.

Q. Do you remember where they had it?

A. Pretty prominently. There was a link from -- I think from their -- their -- almost their home screen, saying, come play our new game.

Q. Did you play it?

A. Yes. I made sure it worked. I mean, by the -- by that time you're sick of playing it. You've

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played this game 1,000 times in three or four weeks of creating it. So I don't think I -- you know, once it's loaded and played, I didn't play it much.

Q. But you made sure it was running?

A. Made sure it was running. Made sure they couldn't complain.

Q. And do you remember when that was?

A. March.

Q. Okay.

A. Oh, wait a minute. Let me back up.

This letter is in March. It wouldn't have been public in March. April. Some -- somewhere in April. It was -- it was very shortly after -- I didn't hand off the files and wait any amount of time of any significance for it to be public on their site. They were very anxious for it to be.

Q. They had given you a very short build time --

A. They gave me -- they said, we want this game in --

(COURT REPORTER'S CLARIFICATION.)

THE WITNESS: Okay.

BY MR. KELLEY:

Q. They had given you a very short timeframe to build this code for them; right?

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A. Yes. They had said, we want it in X number of weeks. And it seemed like it was something in the neighborhood of five weeks.
Q. Okay. And then -- so, as far as you can tell, they put it up very quickly after they got it?
A. Yes, sir.
Q. Do you remember how you transferred the files to them?
A. Most likely in that time in a Zip -- I would have zipped them and attached them to an e-mail.
Q. Okay.
A. You know, the total size of all of these five files would be less than 300, 400 K.
Q. Uh-huh.
A. So it wasn't -- it wasn't a big attachment.
Q. All right. So how did you -- when you started in '96 -- or I guess you said it was almost late '95 -- Shockwave, how did you learn how to write Lingo code and how to -- how to do all of the functions that we've talked about today?
A. Mainly self-taught. I had actually back in -- or beginning of this -- of this deposition, when I described my -- my career in multimedia, my career really began in multimedia in '94.
And I had been doing interactive advertising

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for CD-ROM, and you wrote Lingo there. And so I basically taught myself how to program.
There were one or two books out there on it, one or two forums, and I just started experimenting with it and -- and taught myself, but it -- I had -- by the time we got to December of 1995 I had been doing it for 15 plus months. And so when Shockwave came along, I knew how to write Lingo, and I knew how to write the code.
Q. And --
A. I got better, obviously. This was the early days, but -- but I basically knew how to do most of this stuff.
Q. And the stuff that you were doing before you started doing Shockwave, were you changing cursor appearances and using those kinds of functions that we've seen today?
A. Yes, yes. We did CD-ROMs, you know, of -- again, back then we were -- Adveractive was going to be interactive advertising. And we created CD-ROMs for dentists, you know, a contractor, a -- something else. So a photographer. That would show off their work.
And in each of those CD-ROMs we built a game, which was how we -- how I found out that I

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really enjoyed doing games, you know, in those CD-ROMs. And there were cursors changes in all of those.
Q. So you mentioned you -- you learned basically from documentation and books that other people had written about Director?
A. Yes.
Q. And am I -- did those books describe how to change the appearance of the cursor using the various functions we've talked about today?
A. Yeah. Well, yes. I certainly know that there was something called the Lingo dictionary, and that it was alphabetical, and there was an entry for a cursor.
That it had various cursor changes that you could do. And described what -- you know, the basics of code that you would need to do that with.
Q. Did those books or document -- you know, product documentation describe how to access the variable showing the current location of the mouse?
A. Yes.
Q. Did it tell --
(INTERRUPTION IN THE PROCEEDINGS.)
MR. KELLEY: My apologies. I apologize for that. Wasn't expecting that to happen.

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BY MR. KELLEY:
Q. Did the books describe how to use the current location of the mouse as a variable to -- to define location for other sprites in -- in the presentation or game?
A. I would say it -- the -- the Lingo dictionary wasn't a cookbook with recipes.
Q. Uh-huh.
A. It didn't say -- now, some of the -- some of the books that were written about Director might have given examples --
Q. Uh-huh.
A. -- of how to do that, but the official documentation from Macromedia would have said, you know, here is what mouseH is.
Q. Uh-huh.
A. Here is what the mouseV is, so you can check the locations. And it might have -- it, obviously, explained how to set the cursor of a sprite to this or that. That would have been an entry. Set the cursor --
Q. Uh-huh.
A. -- of a sprite would have been an entry in the dictionary. But it didn't -- as I say, it wasn't a recipe. It didn't say, this is how you do it. It

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left a lot for -- it left things for users to figure out, but all of the -- all of the components were there to do it.

And I -- I was not alone in doing it. There was -- my -- my cohorts, who were also developers, weren't looking at my game and going, oh, wow, he's changing the cursor to this graphic.

They were going, oh, yeah. Well, that's cool how he's changing the cursor. And most of them had -- might have had examples of how they did the same thing.

Q. So you were able to figure it out from the resources that you had?

A. Yes.

MR. KELLEY: Let me go off the record and consult, and then we may be -- we may be done.

THE VIDEOGRAPHER: Off the record at 3:18 p.m.

(RECESS FROM 3:18 P.M. TO 3:24 P.M.)

THE VIDEOGRAPHER: On the record at 3:24 p.m.

MR. KELLEY: All right, sir. We're going to mark as my last exhibit, Exhibit 43, which has production numbers LEXOS 0060609 through 60611.

(DEPOSITION EXHIBIT 43 WAS MARKED FOR IDENTIFICATION.)

BY MR. KELLEY:

Q. All right. So, Mr. Bullock, this is an exhibit that was marked in your earlier deposition. I don't know if you remember it or not. Well, I guess I should ask if you remember it.

A. This is not one of my documents. I believe the earlier deposition, the attorneys used something called Wayback -- the Wayback Machine --

Q. Uh-huh.

A. -- in order to go find working copies of -- that had been captured and stored of the internet, the way it was back in the past.

Q. Uh-huh.

A. And this looks to me like some kind of -- and that -- I'm saying that simply from the https://web.archive.org/web. I'm thinking that this may be a list of files from the Wayback Machine.

Q. And, now, you testified back in 2013, 2014, whenever it was, your deposition, that you hadn't had occasion to use the Wayback Machine. Although, you knew what it was?

A. Yes.

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Q. Have you since had occasion to use it or not?

A. No.

Q. Okay. Well, then I won't ask you to interpret their URL's for me, but you see where there's on this -- do you see all of these rows of stuff?

And then there's -- at some point in the middle of the row there's an http://adveract.com; do you see that?

A. Yes, I do.

Q. What is adveract.com?

A. That was the web address -- today -- today our web address -- our main web address is adveractive.com. Back in that era I was very gun shy, because I was working on a PC that had limits on length of file names.

I was very hesitant about doing anything that involved a file name longer than eight characters. And, therefore, when I went to, you know, the registry.com file naming, you know, when I -- when I set up the website and got the domain, the first domain I got was adveract.com, rather than adveractive.com.

But this was -- this was essentially my website. And, yes, everything from that second http to the right I recognize all of those, adveract.com.

And then the directory names and then the file names to the right of it, I recognize all of those. It's just -- the stuff to the left, the web.org -- archive.org is somebody else's.

Q. Okay. Now, I notice that there's three of them that are not adveract.com. The first row is amf.com?

A. Uh-huh.

Q. Amf_pre.dcr?

A. Uh-huh.

Q. Do you -- do you recall what that one is?

A. That would have been -- that would have been the pre-movie for the AMF Bowling game on -- on the amf.com website.

Q. Okay. And then on the second page -- no. Actually, it's on the first page. Sorry.

There's a -- one of the URL's begins, brunswickbowling.com. Do you see that?

A. Yes, I do.

Q. And it says, "html/game.html"?

A. Yes. I see that.

Q. Do you remember what that is?

A. I would -- I would simply believe from the

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naming conventions used -- first off, that that is the official web -- would have been the official website of Brunswick Bowling.

First off, that's their domain. And then I would have guessed the game.html would have been the page that hosted the Shockwave game.

And this is supposition. There's not a -- is that a date, 19980420 -- I don't know. I don't understand all of the coding, but to --

As far as I know, the only games on Brunswick Bowling in that 1997 period were my games. They weren't -- they were not contracting with any other parties to make games for them. So if they had a game, that HTML page, I believe it was mine.

Q. And if those games would have been in -- if we're talking about a date of April '98, that would have included the Attitude bowling game, as well as the cosmic bowling game?

A. Most -- yes. Both games would have been public at that point. Both of them would have gone public in 1997.

Q. All right. So, now, if you look on the third page, there's a -- see that second line down, it says, "www.hotelbook" --

A. Uh-huh.

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Q. -- ".com"?

A. Uh-huh.

Q. Do you know anything about that?

A. Yes. That was -- we did a soccer game for a company named Utell, U-T-E-L-L. And they were -- they were a European-based hotel chain that was looking for, again, just a fun game for their website to attract viewers.

Q. Got it. And was that a Director game?

A. It was a Director/Shockwave, but a Shockwave game essentially. And that was also done in the 1997 period. That was, again, another early client.

Q. Okay. Yeah, if you go back to Exhibit 41, the bookkeeping exhibit.

A. Uh-huh.

Q. And go to page four. I see some entries from Utell that are labeled, "Utell soccer game" --

A. Yeah.

Q. -- under the accounts receivable?

A. Yeah. We would have -- yeah, that -- there's an invoice in that exhibit on 1/10/97. There is an invoice to them of $2,250.

Q. And there's a payment further down in February?

A. In February. So that actually -- and that

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actually probably predated -- it would have been public in January of '97. That's earlier than -- than my memory had actually -- I knew it was somewhere in the '97 range, but I didn't know it was quite that early.

Q. Okay. It was a soccer game.

Have you seen the soccer game, by any chance, in the disk files that you sent us, or do you --

(COURT REPORTER'S CLARIFICATION.)

BY MR. KELLEY:

Q. Let me just say, have you seen -- let me just keep the question this: Have you seen the soccer game in the -- in the disks that you sent us?

A. I -- I made a copy of the disk -- the 1997 disk.

Q. Yeah.

A. I was recommended -- your attorney, Adams, said, why don't you make a copy before you send it in case? So I made a copy of it, and I went through those files.

And I believe that somewhere on there -- it might be under, "Client." You know, client work or something like that. I believe the Utell source. Director source. And the utell.dcr Shockwave file

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are -- are almost undoubtedly on that CD-ROM somewhere.

Q. Okay. All right. All right. So, Mr. Bullock, do you have a contractual agreement with Perkins Coie?

A. I -- yes, or I feel there's an obligation by Perkers -- Perkins Coie, but I spoke with your attorney, Adam Hester. And having spent two days of my life in depositions before --

Q. Uh-huh.

A. -- I was very blunt in saying -- and I did those entirely for free. I told him, I am -- I've got other things to do. And I feel like I -- at this time if I'm going to do it again, I should be compensated.

And I asked for -- and Perk -- Perkins Coie -- Coie has agreed to pay me for my direct time $250 an hour.

Q. Okay. And no other further obligations? Is that -- is that the extent of the agreement?

A. Yes, sir.

MR. KELLEY: All right. I have no further questions.

Mr. Seth, the witness is yours.

MR. SETH: Thank you. Thank you. Thank you, Mr. Bullock, for being here today and

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for your testimony.
CROSS-EXAMINATION
BY MR. SETH:
Q. Can you tell me, when exactly did you first get involved with this case?
A. It would have been somewhere in the spring, you know. I mean, I -- I -- from having reviewed it now, I know that my first deposition was in June of 2014, and it probably would have been within 60 days before that. So I'd say no earlier than April. Probably April, May of 2014.
Q. Okay. So almost nine years --
A. Yes.
Q. -- since your first contact in this case?
MR. KELLEY: So let me just clarify --
THE WITNESS: Oh, wait a minute. I -- I thought you were asking me first contact on anything having to do with Lexos and cursors and things of that nature. That was the first -- the first -- that was Lexos versus Zynga. And that was when the Zynga attorneys got ahold of me.
In this case the first contact was, I believe, Adam Hester left me a phone message. Might have been the last day of July. But I was on vacation.

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And I think he and I finally spoke -- and maybe Kay Li was on the phone also -- would have been somewhere around August the 9th or 10th of this year. About a month ago.
BY MR. SETH:
Q. Okay. So -- so I've got nine years since you first got involved in anything involving Lexos Media --
A. That's correct.
Q. -- correct?
A. That's correct.
Q. About 60 days before you got deposed?
A. About nine years ago. That's -- that would be my memory, is -- is that I was contacted out of the blue one day. Attorneys I'd never heard from, saying, we're representing Zynga, and we think you -- you know, we'd like to talk to you. And I said, fine.
Q. And did they subpoena documents at that time?
A. Yes, they did.
Q. And did you turn over the documents at that time?
A. Yes, I did.
Q. Did you turn over -- so let me back up one. Other than the previously marked exhibits

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from the deposition -- from your first deposition, my understanding is that the documents we've been going over -- or Mr. Kelley has been going over today with you, are from some two CDs and maybe some other materials that you've recently turned over?
A. Yes.
Q. And those were in response to subpoena as well?
A. Yes. Those were in response to -- to current subpoenas that I received in August this year.
Q. All right. Do you know why you didn't turn those over before?
A. I overlooked them. I -- you know, I had -- there were -- there were -- there were -- I had -- I had a lot of backups, and they -- as far as I know -- and they were in different places.
And as far as I know I never saw these, but they're -- but they were there this time around. I think -- I thought that I searched absolutely thoroughly in 2014, as thoroughly as I could, and sent a ton of materials, which, again, were never returned to me by the first attorneys or the first -- first, you know, judge or anybody involved in the case. My recollection is they never came back.
Q. Okay. And with regard to the documents that

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you went over today from the most recent CDs that you produced in response to the subpoena that you recently received -- I believe you said maybe August from Perkins Coie, you found these CDs in response to that subpoena; correct?
A. That's correct.
Q. So had you received that subpoena a year before or six months before, you would have found the documents then in all likelihood; correct?
MR. KELLEY: Object to form.
THE WITNESS: I guess.
BY MR. SETH:
Q. I mean, this subpoena prompted you to find these documents; correct?
A. My -- this subpoena prompted me to go to three places. Two storage units and -- and look through the rafters in my office, and --
Q. Was --
A. And I came across things that I hadn't come across in 2014 when I did the similar search.
Q. Okay. That's fine. And -- no worries, but I'm -- was that before you entered into some kind of a fee agreement with Perkins Coie, that you did the subpoena -- the search for the subpoena?
A. Concurrent. I mean, you know, I -- because

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I -- I searched one day here, two hours on a Saturday there, an hour and a half, because I was near my second storage unit on another occasion and had to be -- had to be going down there, and -- you know, and -- so it would have all happened relatively simultaneously.

Q. Okay. But you have no reason to believe had you received the subpoena, say, six months before you wouldn't have done the same search for those documents; correct?

A. I would -- I probably would have done the same search. Yes.

Q. Okay. All right. Very good.

Did -- at anytime did Perkins Coie attorneys talk to you about these patents that are in this case?

A. I -- I have still never read the specifics. No, they did not. And I still have never -- I've never read the patents --

Q. No. I --

A. -- Mr. Seth.

Q. No. I didn't ask that question. My question is: Did they ever discuss any part of the patents with you?

A. No.

Q. Okay. Did they ever share any documents

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that they were preparing in this case with you?

A. No -- oh, wait. Wait a minute. Well, let me -- let me back up.

The only -- I asked -- I said -- I said, well, isn't my testimony from 2014 on file somewhere, because I sure would like to see that.

And they said, yes, we have PDF files, which are the transcripts of those two depositions. And they sent those to me. So that's the one thing that we discussed and that I requested in order to see what I had said nine years ago.

MR. KELLEY: Okay. Chris, I have sent over the invalidity contentions that contain some screenshots from, I believe, the Brunswick game that Mr. Bullock was testifying about. I want to show them to him. Do you have any objection?

MS. LI: Can we go off the -- off the record for one second? One second.

THE VIDEOGRAPHER: We're going off? Okay. Off the record at 3:40 p.m.

(RECESS FROM 3:40 P.M. TO 3:47 P.M.)

THE VIDEOGRAPHER: On the record at 3:47 p.m.

MR. SETH: Chris, the question is pending. Will you allow the witness to see the

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invalidity contentions?

MR. KELLEY: Yeah, yeah. He can see the contentions for the purpose of the deposition. Yes.

MR. SETH: Okay. Very good.

Lisa, we'd like to mark the invalidity contentions -- whatever is the next exhibit number. I believe 36.

THE COURT REPORTER: No. It's 44.

MR. KELLEY: 44. Yup.

MR. SETH: I'm sorry. 44.

(DEPOSITION EXHIBIT 44 WAS MARKED FOR IDENTIFICATION.)

MR. SETH: I'm going to just show you on my screen this exhibit. Just give me a second.

MR. KELLEY: Well, so, Sandeep, he's on -- he's looking at the court reporter's laptop. So maybe just tell us what page you want us to look at. As am I.

MR. SETH: Oh, okay. Okay. Very good. Very good.

So what is that, 44?

MR. KELLEY: You got it.

MR. SETH: Okay.

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BY MR. SETH:

Q. Okay. Mr. Bullock, if you'd go to page three of Exhibit 40 -- I'm sorry. If you'd go to page two of Exhibit 44? Can you tell me what the image is that we're seeing there?

A. All right. This is the color image that's underneath the -- the little bullet point, the AMF bowling game. Uses the Shockwave cursor command. Is it under that -- that little paragraph?

MR. KELLEY: I think he said page three.

THE WITNESS: Oh.

BY MR. KELLEY:

Q. No. Page two.

A. He said, "Page two." And I'm on page --

Q. The very first -- the very first image you see on Exhibit 44.

MR. KELLEY: My bad.

Q. On page two of that exhibit.

A. Yeah. Okay. I -- I see only one image on page two. Right?

Q. Correct.

A. Let me scroll -- okay.

Q. That's the --

A. Okay. You said the very first. So --

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Q. What is that image?
A. Am I familiar with that image? Yes. That's a -- that's a screen capture from our bowling game.
Q. Okay. And in the bowling game is it my -- is my understanding correct that -- that if you move the cursor over the bowling ball, it -- and click on the bowling ball, it's -- you have control of the movement of the bowling ball?
A. You have control of the movement of the bowling ball within the area of the lane, which is the, you know, tan yellowish lane area.
You can't grab the bowling ball and take it out of the lane area, but you could -- you can carry it within the lane. Yup.
Q. Okay. And --
A. Vertically.
Q. And in the -- in the parlance that you were using earlier, the bowling ball is -- in Director, what -- what do you call the bowling ball?
A. It's a -- it's a sprite. And a sprite in the sprite channel. And the sprite would be a graphic. And the graphic would be the -- the image of the bowling ball.
Q. Okay. And I understand that sprites can be hotspots, so to speak, where if the cursor is moved

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over the sprite, it'll change; correct?
A. That's correct.
Q. Okay. And then my understanding is you can click on the -- once you've moved the cursor over this sprite, which is the bowling ball image, you can -- you can sort of click on the ball like kind of a drag-and-drop type --
A. Yes. That's a very -- that's a very good description. Uh-huh.
Q. Okay. And -- and then you can -- you can -- is it -- how would you then release the ball towards the pins?
A. By releasing the mouse. You'd basically be dragging the bowling ball around while the mouse button was -- the left mouse button in -- would -- is held down.
And then when you release the mouse button, that would be essentially releasing the bowling ball for it to go down the alley.
Q. Okay. So the sprite is one image, and then it's a hotspot, so that if you move the cursor up over -- turned into the white finger pointer, and then you can click on it, and then you can sort of, if you will, drag it towards the pins.
And then when you release the left click

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button, it'll go towards the pins and presumably knock down some --
A. Not --
Q. -- pins or go --
A. Not --
Q. -- over something; right?
A. Not -- not quite. Not quite. The mechanics of this -- because the throwing of the ball leftwards was way beyond most people's skill. They didn't actually launch the ball by moving the mouse left towards the pins.
When -- when the mouse clicked down the ball, the ball could be dragged vertically, you know, up and down within the confines of the lane. And at the same time there would be -- and it's not shown in this picture.
There would be a little bendy arrow. It would kind of do this thing (INDICATING). This little bendy arrow would go like this, showing you how much the ball would curve when you released the -- when you released the mouse button.
And the idea was the timing of that release was critical to whether the ball would go straight or whether it would curve this way or whether it would curve that way.

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So it was the release of the mouse button that triggered the ball to go down the alley. You didn't actually make any right-to-left movement of the mouse to make the ball go down the alley. It was the release of the mouse that did it.
Q. Okay. I understand. So you could drag the -- you could drag -- you could click -- left click on the bowling ball, and either drag it vertically up to, let's say, the -- in this view the top gutter or --
A. Right.
Q. -- vertically down to the bottom gutter and then release the ball?
A. That's correct. That's correct.
Q. And then the -- and then the ball would go -- the ball would go down to the pins and presumably knock down a pin or more?
A. Correct. And -- and if you dragged it -- it's a good example. And if you think about actual professional bowlers, if you dragged the -- the ball up towards the top gutter, and you released it when the bendy little wavy arrow was curved, it would curve -- the ball would take a curve and come in an arc to -- towards the headpin and hit the headpin.
Q. All right. And -- and when the -- what

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would happen to the white hand after you on depressed the left E -- the left button on the -- on your -- on your mouse to release the ball?

A. My memory is that it simply returned to be the system default cursor.

Q. Uh-huh. Okay. And so --

A. The pointy arrow. Uh-huh.

Q. So -- so the movement of the ball was based on when you released it?

A. The ball would start going down the alley when you released it. And until you released it the ball would move up and down with your mouse as you moved the mouse up and down.

Q. Oh, I see. So -- so, again, it's -- it's when you -- when you unclick on -- on the -- on the mouse that you release the ball in whatever position --

A. This little arrow. It's -- I wish it had the bendy arrow in there. It would be more apparent to you as to how -- how it's --

Q. No. I understand. You're kind of aiming; right?

A. You are aiming. The arrow is --

Q. Okay.

A. -- indicating where you're aiming at.

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Q. Okay. So it wasn't the case where -- okay. Strike that.

If you had -- would it have been workable to actually make the ball somehow part of the cursor?

A. It -- it was -- it was a capability that I would have had. I could have -- I could have made -- I could have -- it's in one of the other examples.

I could have hidden the cursor from the viewer at anytime and said -- said, replace the position of the cursor with this graphic of the bowling ball, and, therefore, the bowling ball would move wherever you moved the cursor.

And in theory it -- you know, it could have been where the user dragged the bowling ball all of the way down or dragged and then released the bowling ball halfway down. There -- I --

Yes. In -- the simple answer is, yes, and -- and -- and another point on that is in the year since a lot of bowling games have been done, and often it's just like a lot of golf games have been done, and how you swing the golf club in one game differs from another.

And how you release the bowling ball in one game differs from another. So this was -- were just the choices we made at the time. And it seemed like a

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pretty simple mechanical --

Q. Well, I understand that -- you didn't invent drag and drop; right?

A. No.

Q. And -- and what you're saying is that you could have made it to where, instead of -- of releasing the ball, you could have just kept -- kept depressing the cursor on the ball and then dragged the ball to the pins; right?

A. Exactly. Exactly.

Q. But that would have -- that would have been a drag function; right?

Even then that's -- that's not -- you're not making the -- the ball the cursor? You're dragging -- you're taking an object and dragging it without making that object part of the cursor; correct?

A. We effectively make it the cursor if we hide the cursor. In terms of what the user sees, the user sees, oh, the cursor disappeared. Oh, the bowling ball is now the cursor. So it's sort of --

Q. I'm not talking about that.

A. Oh, you're not?

Q. I'm saying you -- you could have designed this thing to drag the ball to the pins by keeping depressed -- keeping it -- keeping the cursor --

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keeping the mouse depressed and like literally dragging it like a drag-and-drop operation, but that's not how you wanted to design it; right?

A. That's not how -- that's not how -- that's not how bowling works. One doesn't take the ball down -- all of the way down to the pins and then -- and then wipe the ball around and knock down the pins.

One releases the ball from the other end of the alley, and the ball goes down. So we were simulating an actual bowling game, rather than a drag-and-drop and wipe the ball around on the pins to knock them over.

Q. Understood. Understood.

At the time that the -- you released the -- you stop depressing the left key on your mouse to release the ball, the ball goes on whatever trajectory you set up; right?

At that point the hand reverts to an arrow, and any movement of that arrow isn't going to affect the movement of the ball; correct?

A. That's correct.

Q. All right. And is that how the other games that you're describing, the bowling games, worked as well?

A. With --

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MR. KELLEY: Object to form.
Go ahead.
THE WITNESS: With some wrinkles.
BY MR. SETH:
Q. Okay. But generally you would -- you would be able to click on the ball and then -- and then unclick to release; correct?
A. Yes.
Q. Okay. I wanted to talk about some of your earlier testimony with Mr. Kelley at the beginning of this deposition, and I do -- I appreciated your background and understood it.
Well, let me ask you -- all right. Now, I remember you saying that it was in 1996 you decided to make some games, and was that -- were those on CD-ROM?
A. In -- before -- when I started developing multimedia and decided that that was my calling and career in 1994, the internet was not really an option for doing that sort of thing.
And I set about -- the name of my business was Adveractive, which came from interactive advertising. And I thought that businesses could provide what I called interactive business cards, which could either be a floppy disk or could be a CD-ROM that a salesperson could hand to a potential

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client, and -- and the client could run those interactive business cards on a computer and, you know, get a great impression of the business.
And we were going to do interactive business cards. We did three of them. One was for contractors. One was for photographers, and one was for dentists.
And each one, Sandeep, contained a game, because our thinking was that if -- if -- if we didn't put something fun on there, then the interactive business card would be looked at once and quickly forgotten.
But if we put something fun on there, like a game, that possibly the person receiving the interactive business card would leave it on their computer as an installed program and come back and play it again.
And go, hey, that's fun, and be a memorable experience, a good sales experience for the contractor or the -- or the dentist or the photographer. So that's how we got into games.
And then in -- in December of 1995, when Macromedia announced that Director could now do -- do things that would animate on the internet, that was when I -- I went -- and we weren't -- listen, our

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interactive business cards, it was fun.
We weren't making any money at it. And it was me and one -- one artist. And I was writing all of the programming code. And that's when I went, well, we've done some games. I'll bet we could do games on the internet, and -- and nobody is doing games at all on the Internet.
And that's when --
Q. All right. I'll get to that in just a second. I -- you know, I want to try to keep this short. I appreciate everything you're saying, but we'll just get this through -- we'll be able to get through this quicker and let you go if -- if you could --
And I'll try to be clearer with my questions, because maybe I wasn't, but I'm going to -- I'm going to try to limit your answer to my question, so we can just get through it.
Now, I'm going to get to -- to that in a minute. Okay? Is that all right with you?
A. Fine.
Q. Okay. Great. So with the CD-ROMs, you were originally using Macromedia Director to make CD-ROMs; is that right?
A. To make the executable files on the CD-ROM.

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Yes, uh-huh.
Q. To make the executable files on the CD-ROMs. And I think you said that the .dir files, that was something the user never saw; correct?
A. Correct.
Q. And what they got was a CD with an executable file; correct?
A. Yes, correct.
Q. Okay. And -- and then what would they have to do -- anybody with a CD with -- what would they have to do to -- to play the game? Because -- and let me back up one step.
I believe you testified that there was something that they had to install to run the executable file?
A. No.
Q. No.
Okay. What -- was there something you needed -- that -- at that time you needed to install to create the DIR file?
A. No. Would you like me to quickly explain the process of running a Director file on a CD-ROM?
Q. Yes, please.
A. Okay. On a CD-ROM there would typically be an executable file. And that could be fairly large in

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file size. And there was an .ini file -- dot, I-N-I, file -- on the CD-ROM.

And Microsoft and Apple, who made the computers, they set up a system whereby when a -- when a CD got inserted, and the CD slid into the machine, the machine would know to read the .ini file.

And when the machine read the .ini file, the .ini would say, launch this executable file. And that executable file was there on the CD. So the user didn't have to have anything pre-installed.

And the user didn't have to type any command to run it. They just inserted like the CD-ROM. It slid into the computer, and -- you know, the old Windows machines took 20 seconds, but within 20 seconds the program was up and running.

Q. Understood.

And then the executable file would operate -- or, I say -- I would say interact with the operating system on the computer --

A. Correct.

Q. -- to -- to run -- to run?

But it would have to be installed; correct? I mean, you'd have to --

A. No. It would -- it would never actually install. Like, you know, Microsoft Word, you install

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it as a program. Most CD-ROMs in those days -- which was -- which was a great thing about them and why people sort of trusted them.

They didn't have to run an install program at all. It wasn't like installing software. Usually those programs and the popular games of those days on CD-ROMs simply ran from the CD-ROMs and didn't have to be installed to the hard drive.

Q. Okay. Understood.

And how would -- these CD-ROMs, how would you distribute them?

A. The interactive business cards, the idea was that we would develop one, say, for a contractor. We developed one for a contractor in North Carolina, and it had pictures of the buildings they'd built and text about -- anyway, it was a sales presentation on a CD-ROM.

And the contractor then would burn a lot of copies of that CD. And CDs cost about a dollar a piece, and they would give them to potential clients to show off their work.

Q. Okay. I mean, how did you -- did you mail them? Did you hand it to them?

A. Yeah. We -- we handed it to the contractor, and they basically bought the CD-ROM and were -- they

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could make unlimited copies of it and give it away or mail it or do whatever they wanted with it after -- after we gave it to them.

We did a similar thing for dentists, and the dentists used to hand them out to their clients.

Q. Now, later you said that you -- at some point you -- you -- Shockwave came; is that right?

A. Yes, sir.

Q. And was that -- that was a way that -- was that different than using Director or was it a way to use Director?

A. It was a way to take a Director file and have the Director file appear on an -- in an internet web page, which you could never do before Shockwave.

You authored -- you created the -- you created the game or the animation the same way you would create a game or animation that was going to go on a CD-ROM.

But at the end of the process you would -- you would convert it into a Shockwave file, and the Shockwave file would -- would be able to run over the internet.

Q. If the -- if the user downloaded a plug-in to the browser; is that --

A. That's correct. The user would have -- back

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in those days -- and still to a certain extent to -- to the present, there were helper programs. And those were typically called -- called plug-ins. And Shockwave was a plug-in.

Q. And then your -- if I'm understanding your testimony right, they would -- I -- I remember you saying something about the user would click on a link to a .dcr. Do you recall that?

A. I think I said the user would click on a link to a web page. And then the web page would contain HTML. And the HTML would have an embed tag, which would -- which would call the .dcr and load it into the web page.

Q. I understand now. Okay. Thank you. Appreciate the clarification.

A. Uh-huh.

Q. And -- and let me -- let me ask it this way.

The idea of having different cursor images for different functions was not anything new to you or Director or anything like that; right?

A. No, sir. I believe it had been around. It predated anything I was doing.

Q. Okay. Now, there was some testimony you gave about a lot of paperwork being destroyed. I just wanted to understand. What was that about?

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A. That was -- there were -- and the things related to everything we've discussed here and in that previous nine year ago deposition.

There was -- between nine years ago, 2014, and today, I know -- my recollection is that there were several occasions in which I simply was paring back the amount of old papers that I had in the office.

And I remember throwing away old client files. You know, I couldn't, Mr. Seth, swear if it was five years ago or seven years ago, but -- but I know I've -- I've thrown away batches of papers from clients.

Like I don't have a single thing with Ackerman McQueen anymore. I mean -- and I know, because I've just been searching for it. They were the people who we did the Brunswick game with.

And I know there was an Ackerman McQueen file at sometime, and I can't find it now. And I -- I believe I -- I simply went, old. You know, 25 years old. I'm going to throw it away.

Q. Understood. Understood.

Now -- obviously, not the ones that you've recently discovered and turned over, but a lot of other stuff; correct?

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A. Yeah, and -- and if I could make a distinction, there is -- things like the -- the papers and those files would have taken up a lot of space in file cabinets.

Whereas, a couple of CD-ROMs, you know, tucked away that I didn't find nine years ago, but found this time take up almost zilch in the -- in the area of space. So I didn't do as much pruning of those things, like CD-ROMs, as I would have as paperwork and big files.

Q. Okay. I'm -- I'm going to try to be as linear as possible, but I might jump around a little bit. So, bear with me, but one thing that I wanted to understand was you -- for example, you -- you talked about the instructions you gave to some technical person with regard to -- I forget if it was Brunswick or AMF on what they needed to do to take your file and put it on their web page. Do you recall that letter?

A. Yes, I do. That was -- that was a letter to the advertising agency in Oklahoma that handled the Brunswick account and was creating the web pages for -- for Brunswick.

Q. Right. And I think you said that you weren't talking -- you didn't write to the salesperson. You wrote to some technical person with

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the instructions that they would need to put that on their web page; is that right?

A. That's correct.

Q. Okay. And can you just kind of summarize those instructions?

A. Yes. What -- what we -- you had back in that era was -- you know, in a lot of cases advertising agencies that were creating websites for large companies.

Brunswick is a good example. Coca-Cola Japan was another good example, where nobody at Coca-Cola Japan knew the slightest thing about how to put up a web page, but their advertising agency did.

And in the case of this Brunswick correspondence, I was writing to the advertising agency, who was in charge of doing the web pages for Brunswick.

And at that time they might have known, and did know, how to do static web pages, but to that date, because the things were so new, they had never put up a game. They had certainly never put up a Shockwave game on -- on the Brunswick website until that March, you know, of -- of 1997.

So I was explaining to him -- and he would have been technically proficient. You know, I read

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the letter, and I wasn't -- I didn't have to explain everything to him, but I -- I -- you know, he would have been technically proficient, but I was telling him how to actually stage and put the game on the website, so the public could see it there.

Q. Okay. So there was a number of steps they had to take before it was available for use --

A. For --

Q. -- is that --

A. It was -- there were a number of steps before it would actually be public, where just some, you know, Joe Blow at home could bob up the Brunswick site and see the game.

The whole idea was to make it easy for the user to see it. And my instructions were to the Brunswick and -- and their advertising agency how to make it -- make it so that it would work, so that anybody in the world could see the game.

Q. Whether they had a -- a Shockwave plug-in or not?

A. If they didn't have the Shockwave plug-in, Macromedia had -- had made it so that the Shockwave plug-in wouldn't appear, but -- but back in those days a link to get Shockwave would appear on the -- on -- on the web page.

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And I don't know what the final -- I don't know. I won't go into percentages, but a -- a very -- a very large number of people had the Shockwave plug-in by, you know, the mid to late 1990s. You know, it was a hot new thing.

Q. Okay. But there would be a link to get the Shockwave plug-in if they didn't have it?

A. Yeah. It would -- it would actually -- that little square, where the game would be, would appear with the Macromedia logo that would say, get Shockwave. And you would -- and it would encourage somebody to click there if they -- you know, get Shockwave, if you want to play the game, and --

Q. Okay.

A. -- that's how -- that's how they got penetration with their plug-in.

Q. Okay. And -- and I -- do you recall Mr. Kelley showing you a list of web archive -- just a -- like a table of a long list of web archive type documents that he -- or URL's for web -- web archive or the Wayback Machine?

A. Yes, and I -- and I actually still have it in front of me. That was Exhibit 43. I've got the stack of exhibits right in front of me here.

Q. Wonderful, because you've -- you've got the

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advantage on me. So -- but you recall that exhibit, and you have it in front of you?

A. I do.

Q. And is that -- I just wanted to clarify one thing. You were, I don't want to say, speculating, but kind of inferring from the URL's that the Brunswick -- the Brunswick -- the Brunswick URL was in connection with your game --

A. I --

Q. -- is that right?

A. That's -- that's correct. I was -- I was looking at it, and I was looking, and I realized from the code -- there's a long code preceding the URL that began 19980424.

It's an assumption, Mr. Seth, but it's an assumption that this is a date when -- when whoever this web archive company, they were scrapping the web. And, to my knowledge -- and I was in touch with -- with -- with them and the advertising agency. Nobody else was making games for Brunswick in the 1996, '7, '8 period. And I was. So I'm assuming -- but it is an assumption.

Q. Okay. And you're also -- okay. Strike that.

Okay. Is there any other document that you

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went over today that gave a date at which Brunswick actually had your game on their website?

I know you testified to going to their website. I did appreciate that. I did appreciate that you went over with Mr. Kelley some invoices as well, but do -- do you recall any -- any document we went over today that actually like gave a date that Brunswick had taken the instructions from your letter and incorporated those instructions, put it on the web page, and we have a date now for that?

A. No.

Q. Okay. And -- let's see. I want to talk a bit about a game that you talked about in which -- in which the mouse image, if -- or the -- I'm sorry. Strike that.

Not mouse image. That would be very confusing. But the cat and mouse game that you were talking about earlier; do you remember that one?

A. Yes, I do.

Q. Okay. And I -- I want to make sure I understood something. If I understood you right, the -- the image of the cursor became the cat head; is that right?

A. The -- the cursor was completely hidden from when the -- when the cursor would have been over our

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game area, the cursor was completely hidden by -- hidden from the player.

And subs -- substitution we made was we used an image of a cat head and placed it exactly where the cursor would have been. So in terms of the perception of the player, the perception of the player was their cursor turned into a cat head.

Q. But if they moved their cursor, the cat head -- I mean, that was the cursor image; right? The cat head would show --

A. Yes.

Q. -- the -- where the cursor location was; correct?

A. That's correct.

Q. Okay. And I think you said that the -- that there was a way in which the cat head could look at the mouse; is that -- and when I say, "mouse," I mean -- I don't mean the mouse. I mean the image of an actual animal that's a mouse.

A. That's correct. There was a little mouse in that game, an animated mouse, that was running around from side to side and in and out of three different mouse holes.

And the cat head, when it appeared on -- within the game, its eyes would track where -- either

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looking left or looking right or looking straight ahead, but the eyes of the cat would track the direction of the -- where the mouse was, as if it was looking at the mouse as the mouse ran back and forth.

Q. And the cat head wasn't -- the -- the cat head could be in some location on the screen, and the eyes would be sort of looking at where the mouse animal was?

A. Yeah. If the mouse was to the left of the cat head, then the mouse's -- then the cat's eyes would be looking at the animated mouse to the left. And if the mouse then ran across as it passed right in front of the cat head, the cat head would look straight ahead.

And then when it passed further over to the right and ran past, then the mouse's eye -- the mouse -- the cat's eyes would follow the animated mouse as if it was tracking that and -- and trying -- you know, it -- it was sort of to create the impression of a hungry cat that was about to -- that was going to try to eat the mouse.

Q. Understood. And -- and -- but my point is, is that you didn't have to be moving the cat head for that function to -- to take place; correct?

A. That's -- that's correct.

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Q. Okay. You are also, I believe, talking about, again, involving some birds flying around; do you recall that?

A. It's the hummingbirds animation. Yes, sir.

Q. Yes. So if I understood that correctly, the hummingbirds were flying around, and there were some plants. And you could do a drag and drop on those plants; is that right?

A. That's correct.

Q. So if you -- if you moved your cursor over a plant, you could then -- what? Right or left click some -- some action to -- to basically do a -- for lack of a better word, Mr. Bullock, a drag-and-drop operation?

A. Generally, yes. Uh-huh.

Q. Okay. And -- and I believe you said that the -- but the -- but the -- strike that. Let me try that one again.

The -- but the birds are -- are flying around even before any drag-or-drop operation; is that right?

A. That's correct.

Q. The birds didn't somehow become part of the cursor; right?

A. No, they did not.

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Q. All right. And, again, the tree itself -- strike that. Not the tree.

The plants were different objects that had their own identity inside the Director program and were potentially hotspots, where there may be a change to -- change to the cursor image when you moved over it; is that correct?

A. That's my recollection. Yes.

Q. Okay. But in order to move it, then you'd have to do the drag-and-drop operation?

A. Yes.

Q. So -- and as soon as you unclicked, it wasn't moving anymore?

A. Correct.

Q. It was a traditional drag-and-drop operation, again, for lack of a better word?

A. Correct, correct.

Q. Okay. Now --

(TECHNICAL DIFFICULTIES.)

(COURT REPORTER'S CLARIFICATION.)

MR. SETH: Sure, sure. Let me restart that.

BY MR. SETH:

Q. Mr. Bullock, you were also talking about at some point having -- I don't know if it's appropriate

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to say DCR files or maybe -- maybe the way -- better way to do this is why don't you explain to me, because I may not have understood it, how you had one of these games on your web page, and what would I have to do to use it?

A. You would -- in order to see the game you would need to have the Shockwave plug-in installed in your browser as a -- as a plug-in, as a helper application or helper program.

If you did have that installed, all you would do, if you found a link to come over to my Adveractive web page, you'd just click the link, arrive at the page and within a short period of time the game would be visible to you, and you could be playing it.

So you really did -- if you had the Shockwave plug-in, you didn't have to do much. You just had to arrive at the page, and the game would run.

If you didn't have the Shockwave plug-in, that was the case where you would -- you could find a link, click it, arrive at my same Adveractive page, but instead of the game being visible, you'd see a little square with a Macromedia Shockwave logo in it. And it would say, get Shockwave.

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And if you clicked there, it would take you to a Macromedia site, where -- where Shockwave would get installed on your -- in your browser.

Q. All right. Now, there was a way that the user could select various cursor images in your -- in your games; correct?

A. I wouldn't say that they could select them as much as -- as we would select -- we would select the appropriate cursor image and display it when the user had his mouse -- his or her mouse over something or clicked on something or was in the process of -- of -- of interacting with the program.

So they -- we didn't give them anyplace where they could say -- there was a -- wait a minute. Let me back up. There was a single place where they could -- where in the Brunswick first game they could say, I'm left-handed or I'm right-handed.

And in that case we would make a change as to which cursors we displayed, but we chose when to display those cursors. The user didn't.

So, in other words, the user never got to choose cursors, but the user did get to choose whether they were right-handed or left-handed.

Q. Right. And -- and, sir, I'm going to just take you back to that exhibit that -- just one second.

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Get the exhibit number. Was it 44? The one that's -- the chart that was prepared by the attorneys with some screenshots of yours in there. I think it was Exhibit 44.

A. Well, 44 is your document.

MS. LI: Yeah.

MR. SETH: Yeah. The --

MR. KELLEY: So he wants -- okay. So the one --

THE WITNESS: Okay.

MR. KELLEY: It's in front of him.

THE WITNESS: It's in front of me still. Yeah.

MR. SETH: Okay. Wonderful.

THE WITNESS: I'm on page two. What page --

MR. SETH: Yeah, yeah. I want to go back to that for a minute. I just have to pull it up myself.

Okay. I'm back to it too. Yeah, because I was sort of looking --

BY MR. SETH:

Q. If you look at page three of that document, and you see the screenshot from your game?

A. Yeah. Yes, sir.

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Q. And, unlike -- I was understanding that these were cursors that you could select, cursor images, like the -- the one hand or the other hand or maybe right hand or left hand or something like that?

A. This particular screenshot -- and this is the one with the -- with the arrow pointing at the line that says, "Set the cursor of sprite 21 equals (25, 26)." Is that the same one we're looking at?

Q. Yes, correct.

A. Okay. In this case -- this is not where the user is doing any selecting. This is where I, as the programmer of the game, am saying that these graphics on the screen, their default cursor when the user rolls over these sprites, and the sprites are the graphics, that the -- that the cursor should change to numbers 25 and 26.

And down below you'll see the other red arrow at 25, and its companion is 26. And that is the right-handed arrow with the pointing finger upwards. With the index finger up.

Q. Okay. So that -- that -- this wasn't a version where they could make a left hand, instead of a right hand or something like that?

A. Well, I don't know what -- this is coming from Brunswick Bowl. You -- but, see, this may have

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been, rather than -- rather than where they were choosing the bowling ball, the sprites 21, 22, 23 and 24 might have been buttons.

And so I'm saying that when they roll over these buttons, I want to use these cursors. Whether they're right or left-handed, no matter.

Q. Okay.

A. So --

Q. Understood. Understood. Thank you for that clarification.

And -- let me see here. No. This is the same image. All right. Very good.

And, Mr. Bullock, you were also talking about the Halloween game; do you recall that?

A. Yes, sir.

Q. And the Halloween game, as I -- as I understood it, you could also do sort of -- similar to the bowling ball, you could -- instead of releasing the bowling ball, you could release a pie and have it sort of -- you could sort of aim it at a skeleton head or something Halloweeny and try to hit it?

A. That's correct.

Q. Kind of like hitting the pins; right?

A. Yes. It is throwing a pie to hit something.

Q. Okay. Now, sir, I'm going to ask you a

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question with regard -- similar to what I was asking you about the -- the Brunswick web page, but with regard to your web page --

And, again, I appreciate your recollection testimony and all of that, but was there any document that we went over today that actually would show the first date that you would have one of these games on your web page?

A. As far as I'm concerned, the backups that I made in 1997 that had file dates on all of these things, like the hummingbirds and all of the -- all of the items that weren't client, I couldn't -- I couldn't say for certain when Brunswick first put the Brunswick game on their website, because Brunswick was in control of that, but I was in control of the Adveractive website, and I was in control of the Shock-Baubles and -- and the carnival game.

And the first appearance of my bowling game, which was Shock Bowl on my website. And I know that all of those games for certain went live shortly after the file dates in those backups, which would have been in early 1997 in all cases or in 1996. Many --

Q. All right. I totally --

A. -- of them were in 1996.

(COURT REPORTER'S CLARIFICATION.)

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Q. -- understand. Please, I -- I meant to -- I meant no offense at all by this question, and I -- please, I apologize if it -- if it -- I'm trying to make it not sound in any way offensive.

A. Well, it -- it bother -- it bother -- it bothers me, sir -- it bothers me, sir, because you're asking me if I have a Wayback Machine that I can definitively prove.

And I would say that it is your job and the job of these other attorneys to go find the Wayback Machine in the documentation. That all I can control is my own very clear recollections of that 15 month period of time.

And how promptly -- when we completed a piece of work, how promptly we put it up in the public and earned things like site of the day for Macromedia and site of the day from Cool Sites of the Night, because these things, these very things that we are discussing today, were deemed to be the coolest things on the Internet in 1996. That's my recollection.

Q. I understood your testimony, and I meant no offense.

A. I was offended.

Q. What's that?

A. I was offended.

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Q. I'm -- well, I can't -- I'm sorry. I can only apologize for that.

So -- but I believe that the answer to the question is that you -- that's your recollection for sure, but there -- my question was, was -- if there is a -- if we wanted to know first date that it was on the web page, that particular piece of data isn't in the existing record?

MR. KELLEY: Object to form.

THE WITNESS: I have no answer.

BY MR. KELLEY:

Q. Well, let me ask it a different way.

Was there any document that Mr. Kelley went over with you today that would give that date?

MR. KELLEY: Object to form.

THE WITNESS: There is a -- there -- wait a minute. Let me -- let me answer something for that.

There is on the CD-ROMs and in the earlier -- in the earlier media in the earlier version of the Lexos case there were complete sets of backup files of my website.

And I'm not talking about my authoring files, that DIR or a file here or there, but I think that if -- if the attorneys would look,

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there is an entire copy of the website.

And that would have been a backup copy of the then public internet site known as Adveractive or adveract.com. And if one looked at those file dates, those would have been the file dates of those files on the server that were live at that time.

So, yes, I believe -- I believe there is documented evidence. I believe it is on the CD-ROMs that I've provided in this case. I'm glad I thought of that, but that's -- that's --

BY MR. SETH:

Q. Understood.

A. That would be -- that would be proof.

Q. Understood.

A. And, just one further point, but we made those backups of the live internet site, so that if the server -- and the original adveract.com server was out in Arizona. That if, you know, it like blew away all of our data, that we could quickly restore those websites with all of its content.

MR. SETH: Thank you, sir.

I'm just taking a look over my notes. I think I've hit everything I wanted to. I'm just double checking that.

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And, Chris, there's a bit of a record I want to make, but at the time I'm going to -- for now I'm going to pass the witness.

MR. KELLEY: Okay. I just have one short line of questioning.

REDIRECT EXAMINATION

BY MR. KELLEY:

Q. You spoke to Mr. Seth about the hummingbirds game?

A. Yes, sir.

Q. And you mentioned -- there was some discussion about the -- the different sprites that make up the plants?

A. Yes.

Q. Do you remember how many sprites go into the plants?

A. At least two. Maybe -- maybe more. One was the flower head.

Q. Uh-huh.

A. And then one was -- it had several variations of the stem.

Q. And in your -- in Mr. Seth's questioning he talked about when you clicked -- when the user -- not you --

A. Uh-huh.

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Q. -- but the user clicks on the flower, you can -- the user can move the flower?

A. Correct.

Q. And we went through the code, I think, that showed where -- the position. In order to implement that there's Lingo code; correct?

A. Yes.

Q. And the Lingo code changes the location of those flower sprites; right?

A. Yes.

Q. Now, Mr. Seth referred to the plants becoming part of the cursor -- at least that's what I heard. Maybe that was not his intention -- when you clicked on the plant. Do you remember --

MR. SETH: That --

MR. KELLEY: Go --

MR. SETH: I object to the mischaracterization of my question.

MR. KELLEY: Okay. Well, the transcript will speak for itself, but I'm just trying to make sure I understand Mr. Bullock's --

MR. SETH: I'm just --

MR. KELLEY: -- testimony.

MR. SETH: -- lodging my objection. That --

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MR. KELLEY: Yeah. No. Fair enough. Fair enough. And I'm not -- yup. I'm not the transcript. So all I can go on is based on what I recall, but let's ask the question.

BY MR. KELLEY:

Q. The question is: When the user clicks on the plant, does the plant become part of the cursor?

A. No.

Q. Okay.

A. No. The -- the plant would -- would move in relation to -- as -- as the cursor moved if the mouse was held down, but it did not become a part of the cursor.

Q. So how would you characterize what's happening to the plant then as it's being dragged?

A. It is a -- it is a set of sprites. At least two, but I -- now that I'm thinking, it might have been three sprites that are all moving in lockstep with -- with the cursor as the cursor moves.

Q. And there's the possibility that one of the birds is attached; right?

A. Yes.

Q. Okay. And if the bird is attached, what happens to it?

A. The bird will follow it across the screen.

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And that was one of the -- again, one of the -- a little thing, but it was kind of cool that -- that -- oh, it's like a real live bird would follow the flower around.

MR. KELLEY: Mr. Bullock, thank you for your testimony.

Mr. Seth, did you have anything else?

MR. SETH: Yes. Just a couple of questions, and, Mr. Bullock, then we'll -- we'll thank you and release you from -- from what may be tiresome at this point.

THE WITNESS: Thank you.

MR. SETH: And it's not my intention to keep you.

THE WITNESS: No. Thank you.

RECROSS-EXAMINATION

BY MR. SETH:

Q. In all of the games that we went over the -- the sprites are dragged by depressing the mouse key; correct?

MR. KELLEY: Object to form.

THE WITNESS: No, not necessarily. In some cases, such as the cat and mouse game, the sprites -- so say the cat head -- don't -- don't require a mouse press. They simply track the

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location of the mouse without any clicking whatsoever.
BY MR. SETH:
Q. I'm sorry. I've got to be clearer, because you're right. There was a mouse, as in the animal that we talked about?
A. Right.
Q. And the cat head -- the eyes would be -- even when the cat head wasn't moving, the eyes could be moving in response to the location of this sprite, which was in the figure of a mouse?
A. That --
Q. The animal, the mouse; correct?
A. That's -- that's correct. And that -- that would be the case when the cat head was moving or the cat head wasn't moving. The eyes could react in either one of those two situations.
Q. Correct.
A. And -- and it did not take a mouse -- what I call a mouse down or a mouse up. It took to clicking whatsoever to have the cursor disappear and to have the cursor become a mouse head -- a mouse head -- a cat head. Excuse me.
Q. The cat head was not a function of movement? The cat head -- or -- I'm sorry. Strike that.

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The cat head was a function -- turning into a cat head required going over some portion of the web page; correct?
A. Yes. Going over -- going over -- going over our -- the whole area of our -- our -- our .dcr or Shockwave.dcr.
So when the -- when the mouse entered the DCR file, the space on the screen dedicated to that animation, when the mouse entered it, the mouse, cursor, the normal system cursor, would disappear entirely. And in that case -- and would become -- without any clicking or anything would become the cat head.
Q. Okay.
A. And then the cat head --
Q. Would --
A. -- would track the position.
MR. KELLEY: Hold on.
THE WITNESS: And then the cat head would track -- track the movement of the mouse as long as the mouse remained generally within the bounds of the -- of the game.
BY MR. SETH:
Q. Yeah. You're talking about the animal mouse animation, not -- not the mouse that the user uses to

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move a cursor?
A. I mean, I'm talking about the mouse that is used to move the cursor. I'm talking about the mouse cursor. I -- let's leave the mouse that runs around out of here for a minute.
When the user moved his mouse, the system mouse up within the game, the system mouse would completely disappear and be replaced by me with my code by a cat head.
Q. Understood.
A. The cat -- the cat head would move as if it was a cursor as long as the cursor was within the bounds -- generally within the bounds of -- of my game/animation.
Q. Yes. So as -- as I was -- yes. So inside the game the cursor image became the cat head?
A. That's correct.
Q. Okay. That's all I was getting at. And I just wanted to -- what I was clarifying -- and I think you made this already clear, but just -- just in case, the -- the eyes were tracking the animated mouse on the screen of the animal?
A. That's correct.
Q. And that was -- that was -- regardless of whether you were at that point moving a cursor or not

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moving a cursor?
A. Correct. And would track it all -- it would track it continuously.
Q. Yeah. It was -- it was -- the programming was -- was to have the cat eyes follow the animation on the -- on the screen; correct?
A. Yes. And that was the case whether -- when the user was moving the cat head or when the -- when the cat head was stationary and the user wasn't moving it. It would track in both cases.
Q. Okay. All right. And so, going back to my original question, for all of the drag operations -- for all of the drag operations, like moving the bowling ball up or down or moving the plant, those all required the click of the user on their actual mechanical mouse that's on their desktop or some other input?
A. In the ones we've discussed today, the vast majority have. As far as -- I'm trying to remember all of the cases we've discussed today, but that was certainly the case with the -- mostly with the bowling balls.
Q. Yeah.
A. Yup.
Q. Okay. I didn't recall anything other than

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that, and -- and so, if I'm understanding you correctly, neither do you?

A. There's another case where we hid the cursor. Oh, I know where it was. Wait a minute. Was that -- I could swear there were two cases where we hid the cursor, where we said, cursor go away, and replaced it with a graphic.

Oh, I know. No. Well -- okay. Yes. You're right. The Halloween bowling game, we made the cursor disappear, and it became a pie and a hand on it. And the mouse was down at that time. You're right.

Q. Yeah, because, again, the pie has to be separate from the hand, so that you can release it; correct?

A. The pie and the hand become one and move in unison, you know, for the period when the mouse is down and when the mouse is released and the two separate. Yes.

MR. SETH: Right, right. So I think that's -- I think that's it. Thank you, sir.

MR. KELLEY: I have one --

MR. SETH: I hope this wasn't too rough.

MR. KELLEY: I have one more line of

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questioning.

REDIRECT EXAMINATION

BY MR. KELLEY:

Q. So you remember we discussed the Prowler game; correct?

A. Yes.

Q. Does the Prowler move and react in conjunction with the cursor movement?

A. Yes, it does.

Q. Do you have to click the cursor for that to happen?

A. No.

MR. KELLEY: No -- no further questions.

Limit your questions to the Prowler, Mr. Seth.

MR. SETH: Yes, yes, Chris, I will.

MR. KELLEY: I was generous before. I'm no longer generous. I want to get out of here.

RECROSS-EXAMINATION

BY MR. SETH:

Q. Just explain that to -- that function, please, sir?

A. One of the very interesting features of -- of Shockwave is that it can track the position of the mouse relative to the Shockwave animation when the mouse was anywhere on a web page.

So the Prowler was sort of interesting, because the Prowler reacted to the position of the web -- of the -- of the -- of the mouse, the user's mouse, whether the -- whether the mouse was within the animation or somewhere else on the web page.

It was just -- it was kind of different, because it -- it sort of like knew where the -- where you were moving the mouse even when it wasn't over the animation.

Q. Okay.

(TECHNICAL DIFFICULTIES.)

(COURT REPORTER'S CLARIFICATION.)

THE COURT REPORTER: I'm sorry. Can you say the question again?

MR. SETH: No, I'm not. I'm -- I'm withdrawing the question. I think it was asked and answered.

So we'll let -- we'll let Mr. Bullock go, I believe. Thank you, sir.

THE WITNESS: Thank you, Mr. Seth.

THE VIDEOGRAPHER: Off the record at 4:52 p.m.

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MR. SETH: No. We're not off the record. I have something, but it's not -- it's not with regard to questioning. I just want --

MR. KELLEY: So Mr. Bullock is excused; right?

MR. SETH: What's that?

MR. KELLEY: Mr. Bullock is excused; correct?

MR. SETH: He is excused. Yes.

MR. KELLEY: All right. Thank you much.

THE WITNESS: Thank you. These are the exhibits. Thank you.

THE VIDEOGRAPHER: Are we off the record or not?

MR. KELLEY: No. He wants -- Mr. Seth wants to make a statement.

THE VIDEOGRAPHER: Oh, okay.

MR. SETH: No. I just -- Chris, you know, obviously, we're objecting -- and I just wanted it on the record -- to any new theories on invalidity brought around by your questioning today to the extent that they're not in any invalidity contentions. That's all I wanted to say.

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THE WITNESS: Can you do -- can you do this?
MR. KELLEY: Fair enough. I think -- I think that's an in motion practice; right?
MR. SETH: No. We can argue that. I'm just making the objection.
MR. KELLEY: No, no. I agree. I'm just saying, I'm not going to respond to it, because there's been plenty of back and forth between counsel on that. So, yup. Your notice --
MR. SETH: Okay. I'm just -- I'm just noting it for the record. That's all.
MR. KELLEY: No. I -- I hear you.
All right. I think we're done. Go off the record then.
Mr. Seth, it was a pleasure talking to you. Bye.
THE VIDEOGRAPHER: Off the record at 4:53 p.m. This concludes the deposition of Stephen Bullock.
(SIGNATURE RESERVED.)
(DEPOSITION CONCLUDED AT 4:53 P.M.)

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ERRATA SHEET

Case name: Lexos Media vs. Amazon.com
Case number: 2:22-cv-00169-JRG
Witness name: Stephen Bullock
Date: September 12, 2023

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SIGNATURE PAGE

I, Stephen Bullock, do hereby state under oath that I have read the above and foregoing deposition in its entirety and that the same is a full, true and correct transcript of my testimony, subject to the attached list of corrections, if any.

_____
Stephen Bullock

Sworn to and subscribed before me this _____ day of _____, 2023.

_____
Notary Public

My commission expires: _____

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CERTIFICATE OF REPORTER

STATE OF NORTH CAROLINA)
COUNTY OF DURHAM)

I, Lisa A. DeGroat, RPR, the officer before whom the foregoing deposition was taken, do hereby certify that the witness whose testimony appears in the foregoing deposition was duly sworn by me; that the testimony of said witness was taken by me to the best of my ability and thereafter reduced to typewriting under my direction; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this deposition was taken, and further that I am not a relative or employee of any attorney or counsel employed by the parties thereto, nor financially or otherwise interested in the outcome of the action. Review was not waived.

Lisa A. DeGroat

_____
LISA A. DeGROAT
Registered Professional Reporter
Notary Public 19952760001

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Exhibit G

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

LEXOS MEDIA IP, LLC, Plaintiff, v. AMAZON.COM, INC., Defendant.	Civil Action No. 2:22-CV-00169-JRG (Lead Case)
LEXOS MEDIA IP, LLC, Plaintiff, v. OFFICE DEPOT, LLC, Defendant.	Civil Action No. 2:22-CV-00273-JRG (Member Case)

OPENING EXPERT REPORT OF DR. LOREN TERVEEN

the image data for the game stored in the DCR file. Each of the HTML web pages also includes other text and/or images in addition to the Shockwave game. The cast in the DCR file also contains other images and text that are part of the game or bauble but not part of the cursor.

278. In the Brunswick Cosmic Bowling game, the cast includes image design elements for constructing the bowling alley, such as the lane and gutters (cast members labeled Darkbgrnd, Lane, and gutter2), the pin sweeper (cast member labeled pinsweep), the ball return (cast member labeled breturn2) and buttons to allow the user to request instructions or start a new game (cast members nwgame and 36). The cast also includes hand cursors that embody the specific images into which initial cursor images may be transformed. These cursors are identified in the cast with numbers 11 through 14 and smallhand, leftsmallhand, holdball, and leftholdball.

279. The hand cursors corresponding to the left and right versions of the pointing hand and the open hand do not, by themselves, meet the stipulated requirement of being "representative of at least a portion of the subject or topic being displayed on the screen." Their shapes are representative of the player's hand that can be used to pick things or change settings in the game, but they are not specifically related to bowling. However, the hand cursor with truncated fingers that is used to represent the player's hand when carrying a ball from the ball return meets this claim requirement because it depicts an arrangement of the fingers in bowling ball holes that is representative of bowling, the "subject or topic being displayed on the screen."

280. Additionally, as I understand Lexos' infringement theory, it alleges that the cursor image should not be limited to the cursor but also things that are in the scene that the cursor may overlay. In the Cosmic Bowling game, for example, the hand cursors are used to pick up balls, to set bowling lane arrows, and to change game settings. To do these things it must overlay game elements including bowling balls, lane arrows, and the buttons for selecting handedness of the

player. If Lexos' interpretation of the claim is that the "specific image" referred to includes not only the hand cursors, but also the balls that the hand cursor can overlay (i.e., the Rhino, Helix and Czone balls) and that can move with the cursors, as well as fixed objects like the lane arrows and buttons for selecting handedness that the cursors can overlay, then under this construction, the hand cursors meet this requirement when they are located over game elements like balls, lane arrows, or the handedness selection button. When the hand cursors are over game elements like the balls, lane arrows, and handedness selection button the assemblage of the cursor and the underlying image is representative of the topic of bowling. I do not believe that this is the correct way to interpret "specific image" in the context of claim element 72[e], which makes clear that the "specific image" is the image of the cursor after modification. However, I reserve the right to advance this invalidity argument if Lexos' construction is correct.

281. Additionally, it would have been obvious to a person of ordinary skill in the art that the hand cursors could have been refined to make them more bowling specific, perhaps with introduction of a bowling glove with the Brunswick logo on it. This was purely an aesthetic or thematic choice. The fact that the designers of the Adveractive game thought to have the cursor change to a image of a hand with fingers shortened to represent fingers inserted in the holes of a bowling ball is strong evidence that it was obvious that cursors could include thematic elements from the game. In section 1.F.1.c, I noted where this was done in prior art video games, such as, for example, the cursor turning into the Batman logo in an interactive comic when it was over an animated element.

282. The hand cursor with truncated fingers that is used to represent the player's hand when carrying a ball from the ball return meets this claim requirement because it depicts an

Exhibit H

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Benjamin Han on 2-1-2011.

The application has been amended as follows:

Please replace the following claims with the associated claims below:

7. (Currently Amended) A system for displaying at least one image in association with a cursor image, comprising:

at least one client computer receiving content information including at least one cursor display instruction from at least one server computer, the client computer including a display and a processor, the at least one cursor display instruction specifying an appearance of the at least one image,

following receipt of the content information, the at least one client computer processing the at least one cursor display instruction and displaying the at least one image in accordance with the appearance specified by the at least one cursor display instruction,

wherein the specified appearance includes promotional content, and

wherein the at least one image having the specified appearance tracks a movement of said cursor image and is displayed as one of: (1) at least a part of said cursor image; or (2) separate from said cursor image at an offset from the position of said cursor image on said display.

12. (Cancelled)

25. (Currently Amended) The system of claim 7 wherein ~~at least one of said cursor image and the image having~~ the promotional content ~~specified appearance~~ comprises advertising material.

30. (Currently Amended) A method of displaying at least one image in association with a cursor image on a display of a client computer, comprising the steps of:

receiving, by said client computer, content information including at least one cursor display instruction from at least one server computer, the at least one cursor display instruction specifying an appearance of the at least one image; and

following receipt of the content information:

processing, by the client computer, the at least one cursor display instruction; and

displaying the at least one image in accordance with the appearance specified by the at least one cursor display instruction,

wherein the specified appearance includes promotional content, and

wherein the at least one image having the specified appearance tracks a movement of said cursor image and is displayed as one of: (1) at least a part of said cursor image; or (2) separate from said cursor image at an offset from the position of said cursor image on said display.

35. (Cancelled)

40. (Currently Amended) The method of claim 30 wherein the promotional content~~at least one of said cursor image and said at least one image~~ comprises advertising material.

46. (Currently Amended) A system for modifying a cursor image, comprising:

at least one client computer receiving content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image,

following receipt of the content information, the at least one client computer processing the at least one cursor display instruction and modifying the cursor image to include the visual image and displaying the modified cursor image,

wherein the visual image includes promotional material, and the visual image tracks a movement of the modified cursor image.

54. (Currently Amended) The system of claim 46 wherein said promotional content~~visual image~~ comprises advertising material.

57. (Currently Amended) A method of modifying a cursor image, comprising the steps of:

receiving, at at least one client computer, content information from at least one server computer, said content information including at least one cursor display instruction specifying an appearance of a visual image, and

following receipt of the content information:

processing, by the client computer, the at least one cursor display instruction;

modifying, by the at least one client computer, the cursor image to include the visual image; and

displaying the modified cursor image,

wherein the visual image includes promotional content and the visual image tracks a movement of the modified cursor image.

65. (Currently Amended) The method of claim 57 wherein said promotional content~~visual image~~ comprises advertising material.

68. (Currently Amended) A system for displaying at least one image in association with a cursor image on a display of a client computer, comprising:

at least one client computer receiving content information including at least one cursor display instruction from at least one server computer, the at least one cursor display instruction specifying an appearance of a visual image,

following receipt of the content information, the at least one client computer processing the at least one cursor display information, modifying the at least one image to include the visual image and displaying the modified image at an offset from the cursor image,

wherein the visual image includes promotional content and tracks a movement of the cursor image.

76. (Currently Amended) The system of claim 68 wherein said promotional content~~visual image~~ comprises advertising material.

79. (Currently Amended) A method of displaying at least one image in association with a cursor image on a display of a client computer, comprising the steps of:

receiving, by at least one client computer, content information from at least one server computer, said content information including at least one cursor display instruction, the at least one cursor display instruction specifying an appearance of a visual image; and

following receipt of the content information:

processing the at least one cursor display instruction;

modifying the at least on image to include the visual image; and

displaying the modified image at an offset from the cursor image,

wherein the visual image includes promotional content and tracks a movement of the cursor image.

87. (Currently Amended) The method of claim 79 wherein said promotional content~~visual image~~ comprises advertising material.

91. (Currently Amended) A method of displaying at least one image in association with a cursor image on a display of a client computer, comprising the steps of:

receiving, at said client computer from at least one server computer, content information including at least one cursor display instruction, said content information including a web page and the at least one cursor display instruction specifying an appearance of the at least one image;

following receipt of the content information:

displaying said web page on said display;

processing, at said client computer, said at least one received cursor display instruction; and

displaying said at least one image in association with said cursor image on said display, said at least one image being displayed at an offset from said cursor image on said display,

wherein the at least one image includes promotional content and tracks a movement of the cursor image.

98. (Currently Amended) The method of claim 95 wherein said promotional content~~specified visual image~~ comprises advertising material.

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance:

2. The examiner considered the Applicant's Amendment filed on 10-25-2010 and the Examiner's Amendment of 2-8-2011 and after updated search, no other prior art of record has taught that which was presented in the amended claims

3. Therefore, claims 7-11, 14, 17-22, 25-34, 37-42, 44-87, and 89-108 are allowable.

4. Independent claims 7, 30, 46, 57, 67, 79, and 91, when considered as a whole, are allowable over the prior art of record (Berstis and Rosenberg). Berstis teaches, in column 2, lines 54-59 and column 6, lines 16-23, a client system (including a processor) displaying a hypertext document received from the internet, where the web page has imbedded links, allowing for further web traversal; in column 5, lines 51-57, the client computer showing the cursor at at least one position wherein the processor controls images displayed in conjunction with the cursor at a specific position; in column

5, line 52 through column 6, line 16, the client system providing a display of the web page, including associated links, to the user where upon mouse over of one of the hyperlinks the cursor is changed in appearance; in column 6, lines 1-28, embodiments where the cursor image is changed to have the modification displayed as part of the cursor image (actually modifying the cursor image [283]) and embodiments where the cursor image has its an image displayed adjacent to it at a specified offset (as with the “STREAM" representation [277]).

Berstis is further supplemented by Rosenberg who teaches a system in which additional functionality is provided on a web page based upon a position of a user's cursor (see column 2, lines 50-65), but further teaches downloading the web pages from a server (see column 2, lines 37-56), where both the web pages and additional functionality information based upon cursor image are passed from the server (see column 2, lines 37-65); that is cursor based feedback as the cursor relates to the underlying webpage (see column 2, lines 51-65). However, specifically the prior art of record fails to clearly teach or support the limitations of *the modified cursor image comprising a depiction of promotional content / advertising where the promotional content / advertising follows the cursor as it is moved about the display.*

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS G. BONSHOCK whose telephone number is (571)272-4047. The examiner can normally be reached on Monday - Friday, 5:30 a.m. - 3:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kieu Vu can be reached on (571) 272-4057. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis G. Bonshock/
Primary Examiner, Art Unit 2173
2-8-11
dgb