

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTUIT INC.,

Petitioner

v.

SAMESURF, INC.,

Patent Owner

U.S. Patent No. 9,483,448

Inter Partes Review Case No.: IPR2023-00341

DECLARATION OF STACY FRIEDMAN

I, Stacy Friedman, declare as follows.

I. INTRODUCTION

1. I have been retained by counsel for Patent Owner Samesurf, Inc. in the above-captioned proceeding between Intuit Inc. (“Petitioner”) and Patent Owner. I understand that Petitioner has asserted that U.S. Patent No. 9,483,448 (the “’448 Patent” or the “Challenged Patent” or “patent-in-suit”) is invalid.

2. I have been asked to review and provide expert opinions and testimony regarding issues pertaining to the ’448 Patent in connection with IPR2023-00341, which is an *inter partes* review proceeding involving validity questions related to the ’448 Patent.

3. This Declaration sets forth my discussion of the ’448 Patent, my opinions, and the bases for my opinions.

4. I am being compensated for my time expended in connection with the above referenced proceeding. The compensation is in no way related to the outcome of the proceeding.

II. QUALIFICATIONS

5. I am the President of Olympian Gaming, LLC in Lake Oswego, Oregon, a position that I have held since 2001. In that capacity, I have consulted in the enterprise software and gaming industries regarding, among other things, software development, system architecture, game design and development, slot

machine and table game mathematics, game software and hardware development, software patent infringement and validity and gaming patent infringement and validity. I have served as a subject matter expert in many matters related to software and associated systems, gaming machines or gaming technology, including over forty cases involving allegations of infringement or misappropriation of software or gaming-related intellectual property. Many of these cases have involved distributed software systems running on networked computers, and in several of these cases I have performed source code reviews.

6. In 1996, I earned my Bachelor of Arts degree in Computer Science, magna cum laude, from Harvard College, Harvard University, Cambridge, Massachusetts. Harvard was one of the institutions connected to ARPANET, the precursor of the Internet, and I was in college when the Internet was launched to the public. During college I was part of the technical team responsible for rolling out campus-wide Ethernet to student dormitories to enable in-room Internet access.

7. I have over twenty-five years of professional experience as a software architect and system designer, including in enterprise software, regulated casino gaming systems and gaming mathematics. My recent CV is provided as Exhibit A.

8. My first job after college was at Oracle Corporation in Redwood Shores, California. I was part of the Oracle Forms team, a graphical tool for developing GUI applications to connect to Oracle databases. One of my projects

involved helping transition from older network technologies to newer web technologies using Java and web servers. I wrote a debugging proxy and load-testing tool in Java to intercept protocol messages between the frontend web client and the backend web server, allowing the team to inspect messages for errors and perform scalability testing. I then traveled to an IBM testing lab in Boeblingen, Germany to scale-test the software, ultimately resulting in a \$10M sale to the Netherlands tax authority.

9. My professional experience in the gaming industry started in 1998 when I joined Silicon Gaming in Palo Alto, California as a game model engineer before it was acquired by International Game Technology (“IGT”).

10. In 2001, in response to the rapid rise of Internet casino websites, I started an independent casino game design and analysis consultancy, Olympian Gaming LLC. Based on my experience designing, developing, and placing dozens of games in Las Vegas, Reno, and Atlantic City casinos, I advise gaming software vendors, new game inventors, and casino game manufacturers in the fields of wagering, gameplay design, mathematical analysis, and statistical verification.

11. The majority of the work I have done through Olympian Gaming, both in product architecture and design and as an expert witness, has related to networked gaming systems or web-based software. For example, all of my initial clients in the 2001-2003 timeframe were online casino software vendors whose

products relied upon client-server architectures and various messaging protocols over the Internet. Additionally, in 2011, I was engaged by DoubleDown Interactive, a social gaming web-based software company offering free-to-play slot machine games on its Facebook app, *DoubleDown Casino*. As indicated on my CV, many of my expert engagements have related to networked systems or web-based software, including online games using Amazon Web Services to host servers for hundreds of thousands or millions of simultaneous users.

III. MATERIALS CONSIDERED

12. In forming the opinions I set forth in this declaration, I reviewed and considered the materials linked or cited in this document as well as the materials set forth in Exhibit B. Unless otherwise stated, I have personally reviewed all of the materials linked or cited in this document and therefore have personal knowledge of these materials.

13. My analysis is ongoing, and I may supplement or amend these opinions based on the review of new information or further analysis, and in rebuttal to positions taken by Petitioner or Petitioner's expert.

IV. LEGAL STANDARDS

14. I am not an attorney, but I have been informed of the following legal standards. I have used these legal standards as a framework in forming the opinions contained in this Declaration.

A. Principles of Claim Construction

15. I understand that, to construe the meaning of a claim term, a court will first look to the claim language itself and its usage in context with other claim terms. I understand that courts will defer to the ordinary and customary meaning that the terms would have to a POSITA at the time of the alleged invention.

16. I also understand that a court will look to intrinsic evidence if the meaning of the term to a person having ordinary skill in the art at the time of the alleged invention is not apparent. I have been informed that this intrinsic evidence includes the context of the words in the claim, the specification of the patent, and the prosecution history of the patent. In fact, I understand that the specification is considered the single best guide to the meaning of a disputed term. I understand that, while the specification is to be used to interpret terms presented in a claim, it is impermissible to import limitations from the specification into a claim.

17. Also, I have been informed that a patentee can become their own “lexicographer” by defining terms within the patent however they wish, as long as they do so explicitly. For evidence that the patentee intended to become their own lexicographer, I understand that the court may look to the intrinsic evidence.

18. I understand that the prosecution history is an important source of intrinsic evidence and generally relevant to the proper interpretation of a claim. For example, I have been informed that the prosecution history can provide

additional context that, in addition to the written description, is helpful in interpreting the claims. Further, I have been informed that prosecution history is useful in determining what the patentee believed they originally were claiming, and whether the patentee has narrowed a potential claim construction in an amendment or argument to distinguish the claims over the prior art. Thus, I understand prosecution history is relevant in claim construction.

19. If the meaning of a term is clear from the claim language and the intrinsic evidence, I understand that the claim construction must stop there. I have been informed that only if the meaning of the asserted claims cannot be determined after assessing the intrinsic evidence, may extrinsic evidence be considered. I have been informed that such extrinsic evidence may include expert testimony, dictionaries, and well-known treatises. Even if extrinsic evidence is considered, the claim construction may not be inconsistent with the construction mandated by the intrinsic evidence.

20. I understand that, when a dependent claim recites elements that are comprised by an element of an independent claim, the element that appears in the independent claim has a scope broad enough to encompass the elements of the dependent claim.

B. Obviousness

21. It is my understanding that, in an IPR proceeding, the patent challenger must establish invalidity by a preponderance of the evidence. It is my understanding that, to prove that a claim is invalid for obviousness under 35 U.S.C. § 103 (the pre-America Invents Act version), the challenger of its validity must prove that, for example, two or more prior art references in combination disclose, expressly or inherently, every claim limitation and also that the claim, as a whole, would have been obvious to a person of ordinary skill in the art at the time the alleged invention was made.

22. It is my understanding that the relevant standard for obviousness under 35 U.S.C. § 103(a) is as follows:

23. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented 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. Patentability shall not be negated by the manner in which the invention was made.

24. In determining whether or not a patented invention would have been obvious, I understand that the following so-called “*Graham*” factual inquiries must

be made: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the pertinent art at the time the alleged invention was made; and (4) any secondary considerations, including commercial success, long felt but unsolved needs, failure of others, etc.

25. I understand that a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was independently known in the prior art. Most, if not all, inventions rely on building blocks of prior art. The challenger of a patent's validity must prove that, at the time of the claimed invention, there was a reason that would have prompted a person having ordinary skill in the field of the invention to combine the known elements in a way the claimed invention does, taking into account such factors as:

- a. whether the claimed invention was merely the predictable result of using prior art elements according to their known function(s);
- b. whether the claimed invention amounted to nothing more than using a known technique to improve similar devices or methods in the same way;
- c. whether the claimed invention provides an obvious solution to a known problem in the relevant field;

- d. whether the prior art teaches or suggests the desirability of combining elements claimed in the invention;
- e. whether the prior art teaches away from combining elements in the claimed invention;
- f. whether it would have been obvious to try the combinations of elements, such as when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions; and
- g. whether the change resulted more from design incentives or other market forces.

26. To find the invention obvious in light of a prior art combination, the prior art combination must have provided a reasonable expectation of success.

27. I further understand that it is not permissible to use hindsight in assessing whether a claimed invention is obvious. Rather, I understand that, to assess obviousness, one places oneself in the shoes of a person having ordinary skill in the relevant field of technology at the time the alleged invention was made who is trying to address the issues or solve the problems faced by the inventor, considering only what was known at the time of the invention and ignoring current knowledge of the inventions.

28. Regarding the fourth step in the four-step process for assessing obviousness (the so-called *Graham* inquiries), specifically the step involving “objective considerations,” I have been told that some of the factors that may be considered are those of copying, a long felt but unsolved need, failure of others, commercial success, unexpected results created by the claimed invention, unexpected properties of the claimed invention, licenses showing industry respect for the invention, and skepticism of skilled artisans before the invention was made.

V. LEVEL OF ORDINARY SKILL

29. I understand the Board has found that “a person of ordinary skill in the art would have had (1) at least a bachelor’s degree in computer science, computer engineering, electrical engineering, or a similar field, and (2) at least two years of work experience in software development and/or web-based software.” DI at 11. For the purposes of this declaration, I apply the Board’s definition of a POSITA.

30. Based on my experience and educational background, as of the priority date of the ’448 Patent (which I assume to be May 20, 2010), I qualified as a POSITA as defined above. Throughout this declaration, unless otherwise noted, my opinions are from the perspective of a POSITA as of the priority date of the ’448 Patent.

VI. OVERVIEW OF THE CHALLENGED PATENT AND CLAIMS

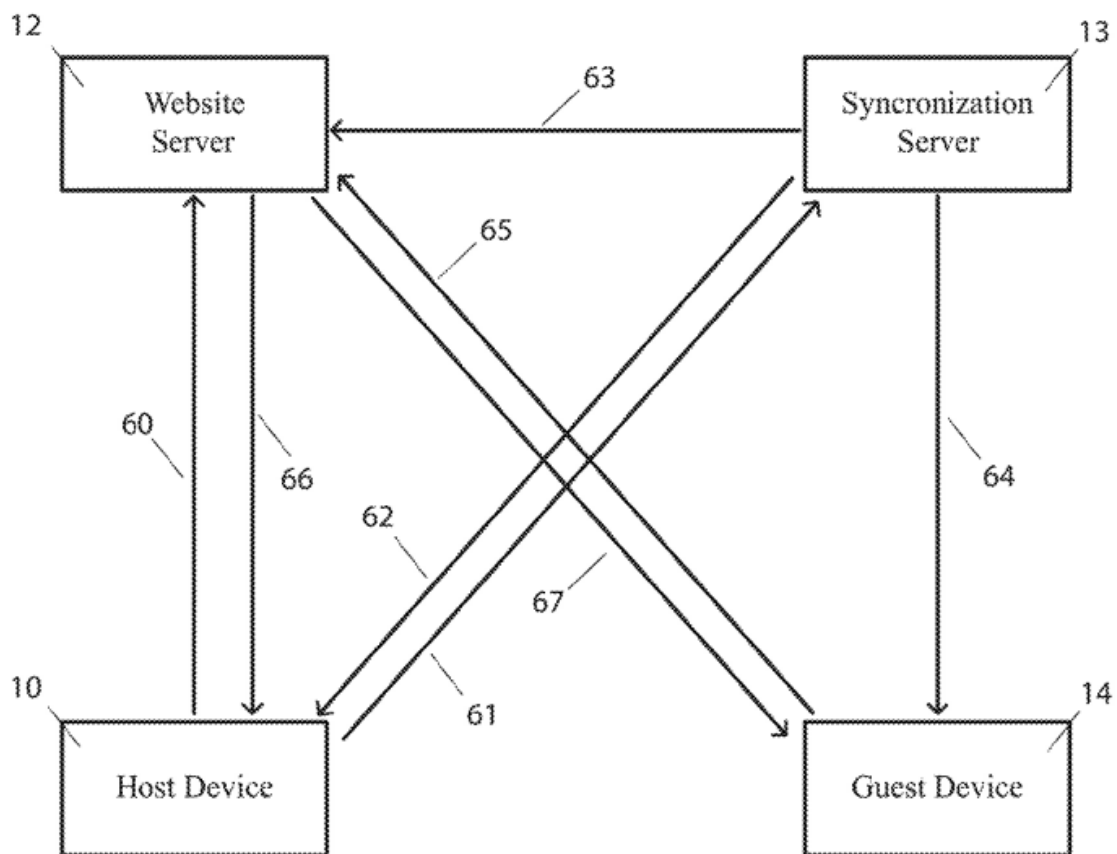
31. I understand the '448 Patent claims priority to an application filed on May 20, 2010. For the purposes of this declaration, I assume May 20, 2010 is the priority date of the '448 Patent.

32. The '448 Patent relates to a way of synchronizing multiple users' internet browsing experiences. Pursuant to the invention of the '448 Patent, a host device (the device that initiated the browsing session) implements a synchronized browsing session, "comprising recording a shared web browsing interaction, and transmitting information related to the shared web browsing interaction to a synchronization server." '448 Patent at Abstract.

33. FIG. 5(a) of the '448 Patent describes the process flow at a high level. A Host Device 10 makes a website request 60 to a website server 12. Then information about that web request (*i.e.*, information related to the shared web browsing interaction performed by the host device, which may comprise the URL of the server, cookie information, form data, javascript or other user-inputted information or files) is forwarded in message 61 to a Synchronization Server 13. The Synchronization Server then forwards that information to Guest Device 14 in message 64, which it uses to formulate its own website request 65 to the website server 12 (*i.e.*, to perform the shared web browsing interaction performed by the host device based on the information received from the synchronization server). In

exemplary embodiments, both the host and guest devices make identical website requests. See '448 Patent at 16:5-17:27; 5:27-30, 5:45-49, 6:57-67, 3:15-25.

FIG. 5(a)



34. The '448 Patent explains that “utilization of the present invention does not materially impose more bandwidth or processing power requirements than simply browsing the internet using standard, conventional methods.” '448 Patent at 5:35-38. This solves a technical problem with prior art methods such as desktop

or screen sharing because those “work by broadcasting continuous screenshots of the host screen in large files or packets and require high levels of bandwidth and computer processing power. As a result of their high bandwidth and processing power requirements, current methods such as desktop sharing are inadequate for enabling larger groups to all view and fully interact with that interactive content in a simultaneous manner.” ’448 Patent at 2:30-38.

35. I understand the Petitioner has challenged claims 1-16 of the ’448 Patent.

A. Claim Construction

36. The Board noted that it was not expressly construing any claims terms. DI at 13. I understand that this means each term is given its plain and ordinary meaning in view of the specification. However, the Board found that the scope of the claim term “information related to the shared web browsing interaction” encompasses web pages or snapshot data. DI at 54.

37. I disagree that web pages or snapshot data are within the plain and ordinary meaning of “information related to the shared web browsing interaction” in view of the specification. As a first point, the claims distinguish “information related to the shared web browsing interaction” from “webpage content.” Limitation [1.f.i] states that “information related to the shared web browsing interaction” is “processed by a browser of the invitee device” and enables it to

“generate a request to retrieve ... webpage content.” Similarly, element [1.e] has the host “sending a request for webpage content to a website server independent of the synchronization server” while element [1.f] distinctly has the host “transmitting information related to the shared web browsing interaction to the synchronization server.” Therefore, “information related to the shared web browsing interaction” is claimed separately from “webpage content.”

38. Further, the specification explicitly distinguishes between a website request (made from a browser and sent to a website) and a web response (web page data sent from the website in response to the browser request from the browser), and it is the latter that includes “webpage content” as that term is used in the claims. For example, “typically, in *response* to *website request 60* sent by host device 10, *website server 12 will send website content reply 66* to host device 10.” ’448 Patent at 16:23-25, emphasis added. Thus, website content reply is the response sent from the web server in response to the request made by the host device. A POSITA would have understood that this disclosure (browsers sending web requests and receiving website contents in response) is the typical and long-known method for how web browsers interact with web servers: the browser makes a request for webpage data, the server sends back a response with webpage data.

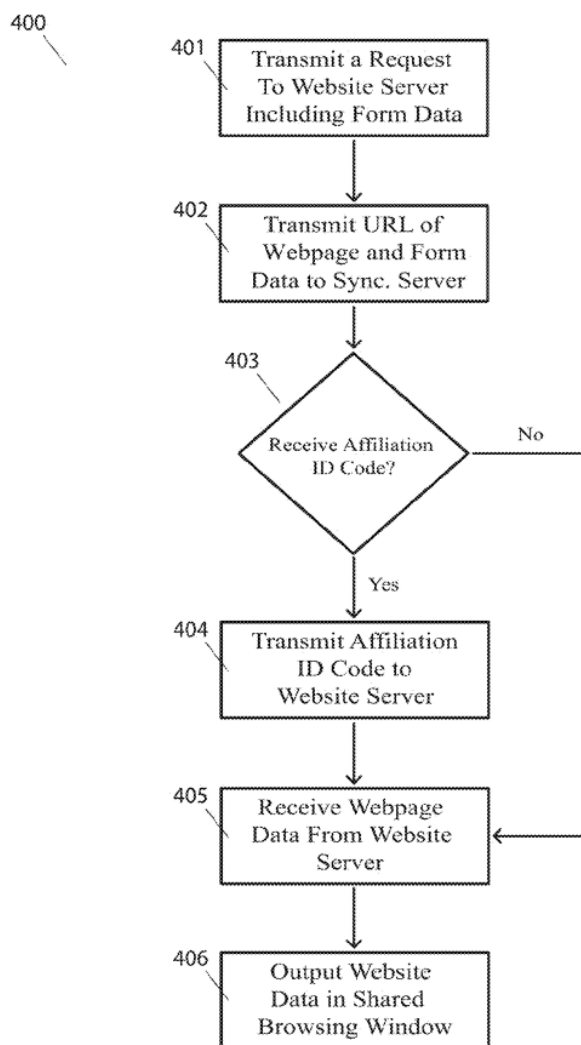
39. More generally, it makes no sense for Petitioner to suggest that “information related to the shared web browsing interaction” that is processed and enables a device to generate a request for webpage content from an independent website server could itself be the requested webpage content: if the invitee device already has the desired content, there would be no reason to make a further request for it. Put another way, elements [1.f.i] and [1.f.iii], both of which relate to the invitee device retrieving webpage content, would be rendered meaningless surplusage if the information that the invitee device had already received from the synchronization server was itself the webpage content to be retrieved from the website server.

40. The Board also implied a distinction between “information related to the shared web browsing interaction” and other terms in the patent, namely “webpage interaction information” or “relayed webpage interactions.” DI at 31.

41. However, in my opinion, a POSITA would have understood that “webpage interaction information” was used equivalently to “information related to a [] web browsing interaction,” and similarly that a “shared web browsing interaction” was equivalent to a “relayed webpage interaction.”

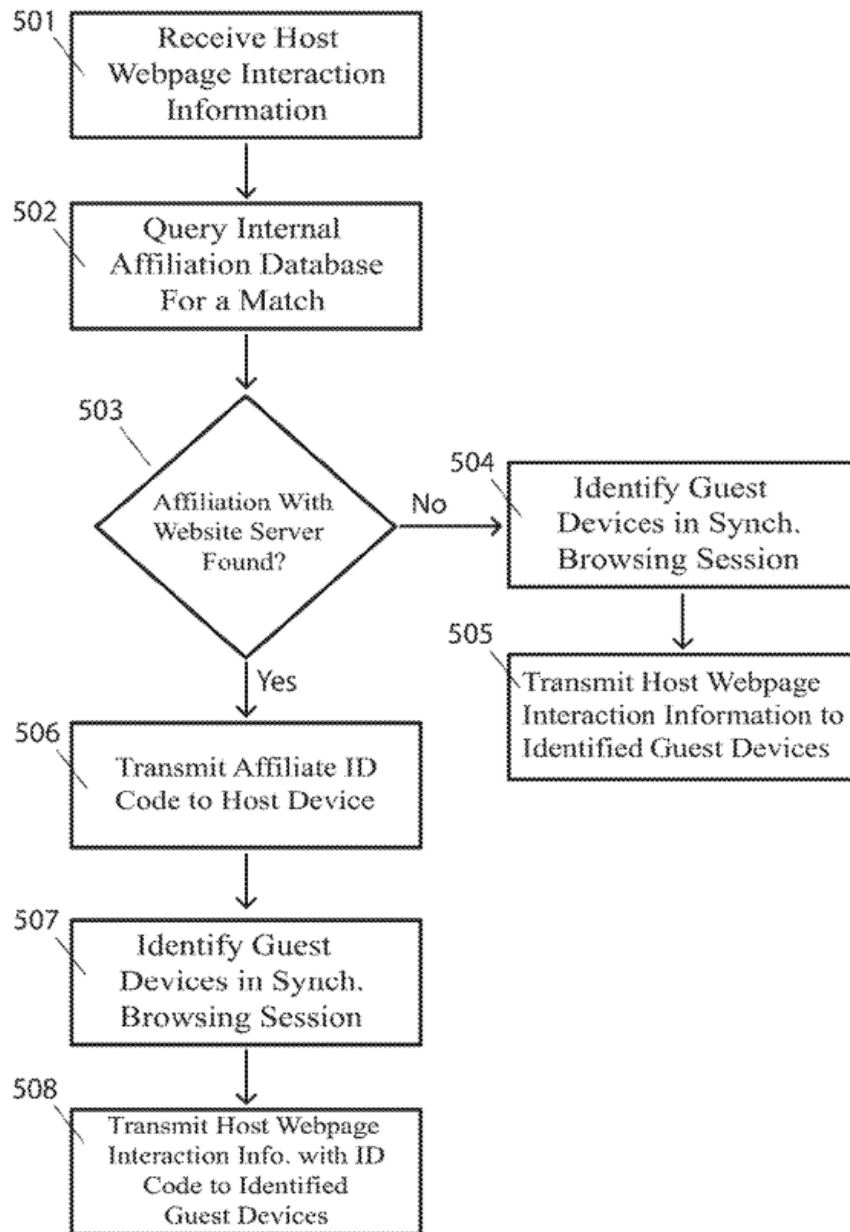
42. For example, FIG. 5(b) is “a method utilized by a host device for the execution of a synchronized browsing session” and in step 401, the host device “Transmit[s] URL of Webpage and Form Data to Sync. Server.”

FIG. 5(b)



43. FIG. 5(c) is “a method utilized by a synchronization server” and at step 501 shows that the synchronization server receives “webpage interaction information” from a host (the claimed “information related to the shared web browsing interaction” that is “transmitted ... to the synchronization server”).

FIG. 5(c)



44. A POSITA would have understood that the “Host Webpage Interaction Information” received by the synchronization server in step 501 is the

same “URL of Webpage and Form Data” transmitted by the host to the synchronization server in step 402. As the specification teaches: “In step 402, host device 10 transmits communication message 61 to synchronization server 61 [sic: 13]. ... communication message 61 may comprise the URL of the website requested, such as the URL for website server 12, form data inputted by the user of host device 10, java script or other data.” ’448 Patent at 18:12-18. Then, “[i]n step 501, synchronization server 13 receives communication message 61 from host device 10. As previously described, communication message 61 includes webpage interaction information...” ’448 Patent at 18:56-59. Therefore, the same message (including webpage interaction information) that is sent from the host in step 402 is received by the synchronization server in step 501.

45. In my opinion, it is clear from the usage of the phrase “webpage interaction information” in the specification and figures that that term corresponds to the claimed “information related to the [] web browsing interaction” found in the claims. A POSITA would have understood that the primary way a user interacts with a webpage is with a web browser. Therefore, a webpage interaction is a web browsing interaction, and webpage interaction information is “information related to a web browsing interaction.” Furthermore, the claimed “web browsing interaction” is specifically limited to a “web browsing interaction of the host device within a web browsing window.”

46. As to the term “shared” in “shared web browsing interaction,” the ’448 Patent teaches that a webpage interaction may either be “shared” or “unshared” (or “non-shared”). *See, e.g.*, ’448 Patent at 20:3-21:29, claims 8, 14. The ’448 Patent also teaches that “shared” webpage interactions (performed within a shared browsing window) are “relayed” to other devices, while “unshared” webpage interactions are not relayed. *See, e.g.*, ’448 Patent at 7:26-37, 21:18-29. In other words, a POSITA would read the ’448 Patent to be using the words “shared” and “relayed” according to their plain and ordinary meanings, and further have understood that the ’448 Patent teaches to share a webpage interaction by relaying it through a synchronization server. A POSITA would therefore find these passages in the specification to correspond to the claim limitations “determining that a web browsing interaction of the host device within a web browsing window is a sharable web browsing interaction,” “recording a shared web browsing interaction,” and “transmitting information related to the shared web browsing interaction to the synchronization server.”

VII. TECHNOLOGY BACKGROUND

47. The technologies underpinning the World Wide Web were well-known prior to the May 2010 priority date of the ’448 Patent. In general, the web operates in a client-server fashion, with web clients making HTTP requests to web servers at particular addresses (specified by a uniform resource locator or URL)

that respond with HTML and other webpage data. The most well-known type of web client is a browser, a GUI program that renders HTML and webpage data into a graphical form for the user's viewing. For instance, while HTML is a purely text-based markup language, a web browser rendering HTML may present formatted text, graphics, audio, animations, etc. However, web clients other than graphical browsers were known; such programs may, for example, retrieve and process data requested from a website without displaying it to a user.

48. The HTTP protocol is stateless, meaning that each request to a web server is independent from prior requests. In order to keep track of state information that should persist across multiple requests, a web server can return state information (known as a "cookie") as well as the requested HTML to the requesting web browser, and the web browser can use that cookie as part of a subsequent request to the server, which may then change the information in the cookie in its next response, and so on. This provides a mechanism for maintaining state across multiple requests and responses. Cookies are described in U.S. Patent 5,774,670 to Lou Montulli, the programmer credited with the invention of the browser cookie while working at Netscape. *See* U.S. Patent No. 5,774,670 at 7:9-44, FIG. 4:

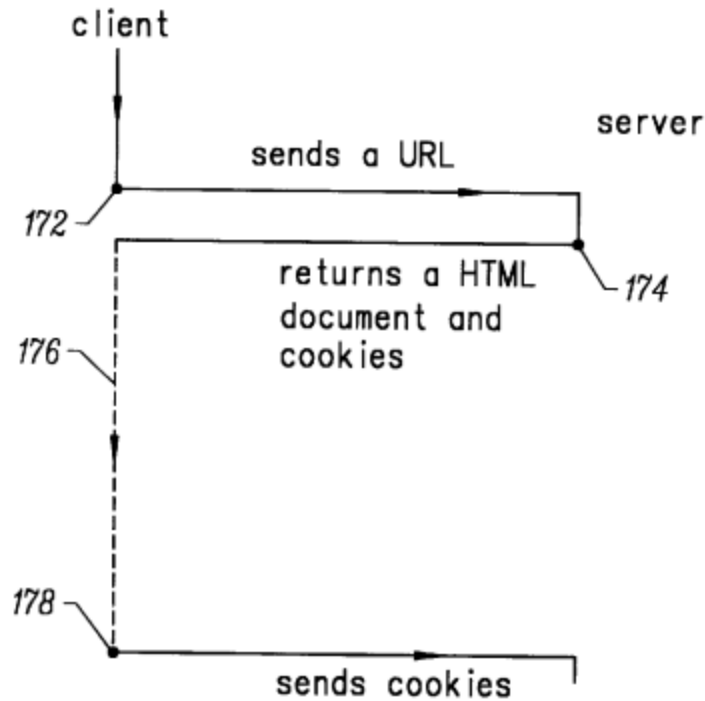


FIG. 4

49. Prior to May 2010, there were three categories of techniques for sharing webpages: (1) sharing the address of a webpage at a web server, (2) sharing the HTML and other webpage from that web server, or (3) sharing visual images of a webpage that has already been rendered by a browser.

50. The first category relates to sharing the address or link (i.e. URL) of a webpage. For instance, one person could tell another person (using any form of communication) to browse to www.uspto.gov. Link sharing was commonplace via email or SMS text messages, for example. However, sharing a link did not otherwise coordinate the users' browsing activity in any meaningful way.

51. The second category relates to sharing the HTML webpage data returned by a web server in response to a web request. As discussed below, several prior art systems relied upon a central system acting as a middleman or proxy to fetch webpage data from a web server and forward that data to multiple web browsers. Like link sharing, webpage sharing using a middleman can present the same webpage data to multiple users but does not otherwise coordinate users' browsing activity in any meaningful way. For example, after two different users receive the same webpage data from a middleman server, both users may interact with the rendering of that webpage data in their own web browsers independently (for example, one user may scroll down the page to read additional content while the other does not). Additionally, using a middleman server to fetch webpages, especially one that performs processing on that webpage data before forwarding it, introduces latency and additional resource usage.

52. The third category relies upon sharing the output rendered by a web browser. For instance, one of the most basic (and least technological) ways to share a webpage with someone else is to browse to it, then print out a paper copy and hand that paper to another person. This technique was commonplace in the early days of the Internet when relatively few people had computers and even fewer had Internet access. Similarly, screen sharing or remote desktop techniques, which were well-known prior to May 2010 to be able to replicate the contents of a

user's computer screen onto another user's computer over a network, could be used to replicate the output of any program on the screen, including the output of web pages rendered by web browsers.

53. Screen sharing has the benefit of ensuring that all users are observing the same screen content at the same time, including the contents of the web browser window if the shared screen is running a web browser, but is also known to be very resource-intensive, requiring significant processing power and network bandwidth compared to web browsing techniques. Additionally, when users' computers do not have sufficient processing power or network bandwidth, screen sharing may lead to low-resolution or pixelated images and significant lag (latency) and therefore loss of synchronicity. Additionally, screen sharing is known to suffer from several practical problems including accidentally sharing material that should not have been shared (e.g., email notifications containing unrelated information, sensitive information such as credit card numbers, etc.)

VIII. OVERVIEW OF THE APPLIED REFERENCES

A. Lebrun

54. The Lebrun reference contains multiple different, incompatible embodiments that, from the differences in figures, were apparently drafted by different people. The petition focuses on only one subset of these embodiments, namely a "group surfing" system where a central group-surfing server fetches

webpage data and sends it to multiple web clients participating in the group. *See, e.g.,* Lebrun at 45:6-29.

55. Lebrun's group surfing server may fetch web pages using cookie or other information before re-sending the received page to the participating clients. Lebrun at 45:26-29. Specifically, if the group-surfing server receives a cookie from a website, it saves it in a local database and uses that cookie for subsequent requests to that website. Lebrun at 46:7-11. Lebrun teaches that "the group-surfing server 140 directs the target web site 130 to deliver that next page 153 to the group-surfing server 140 itself. The group-surfing server 140 then re-sends that page 153 to those web clients 110 participating in the session. This allows usage of a single set of 'cookies,' or other data related to identity or session, sent by the website 130 and stored by the group-surfing server 140 at each participating web client 110." Lebrun at 35:10-15. In other words, the group-surfing server maintains cookie or other identity/session information in a local database and uses that information to retrieve personalized web pages (based on that cookie or identity information) before sending those web pages to the participating clients.

56. In a different process, a client may send an "import-export" message to a group-surfing server, "directing import or export of information relating to websites (such as bookmarks, 'cookies,' or user registrations at participating web sites 130)." Lebrun at 49:1-3. Lebrun also states that "[t]he controlling web client

110 can import or export information related to web sites 130, including bookmarks, ‘cookies,’ and user registrations at participating web sites 130.” Lebrun at 41:9-12. However, Lebrun does not otherwise discuss the use of this imported or exported information, nor does it teach or suggest that the import/export process relates to the group-surfing process where the group-surfing server fetches web pages and re-sends them to web clients. For example, with respect to Figure 4, the import or export process is described at flow points 290-292, while the group-surfing session is performed at flow points 230-236. See Lebrun at 45:6-46:15, 48:29-49:15, Figure 4. In other words, Lebrun does not teach that the import/export process is in any way related to the steps of performing the group-surfing session. Moreover, in my opinion, a POSITA would not have thought that a process labelled “import or export” and described as in Lebrun would be related to a synchronized browsing session as claimed.

B. Prajapat

57. The Prajapat reference discloses three different systems, one is fundamentally incompatible with the other two. The first embodiment is called “peer-to-peer dynamic web page sharing” and involves “[c]ommunication system 10 [which] includes browsers 12, web media servers 14a and 14b coupled via network 16, and web content server 18 coupled to web media server 14a via link 20. In general, web media servers 14 allow browser 12a to co-browse one or more

web pages with browser 12b. The term ‘co-browse’ may include one or more of the following situations: browser 12a and browser 12b display the same web pages at substantially the same time; browser 12a may alter web pages and browser 12b may view those alterations; browser 12b may alter web pages and browser 12a may view those alterations; or any other suitable situations.” Prajapat at [0012].

58. The second embodiment discloses a different system for “peer-to-peer simple web page sharing” wherein “[s]ystem 40 includes browsers 12, web media servers 14, and web content server 18. In certain embodiments, system 40 includes firewalls or other security measures 25. In operation of system 40, browser 12a may request a web page sharing session with one or more other browsers 12 (in this example, browser 12b) and may submit this request to web media server 14a. Web media server 14a may locate the web media server associated with browser 12b in a substantially similar manner to that described above with reference to FIGS. 1 and 2.” Prajapat at [0041].

59. A third embodiment discloses “peer-to-peer web page sharing using at least two phones” wherein the components and functionality of the web media server 14 from the simple web sharing embodiment are incorporated into the phone itself as a “user agent (UA) and media controller 54,” and “a user of phone 50a may make a telephone call to a user of phone 50b and may include in the phone call a request to share web pages.” Prajapat at [0044-45]. Prajapat teaches that

“[i]n one embodiment, the users of browsers 12 may continue to engage in a voice session during the web page sharing session.” Prajapat at [0046]. It is worth noting from historical context that Prajapat was filed in 2003, several years before the widespread availability of smartphones with modern mobile browsers (such as the Apple iPhone and Samsung Galaxy phones), at a time when accessing the Internet using a mobile phone involved long delays and awkward, low-resolution (or sometimes text-only) web browsing interfaces. A POSITA would have understood that Prajapat’s technique of translating web content to device-specific renderable forms “due, in part, to possible differences in browsers 12a and 12b” (see Prajapat at [0039]) was relevant to 2003-era non-smartphone web browsers that, due to such technological constraints, could not render web pages like a 2010-era mobile web browser could, and certainly not like a 2010-era desktop computer could. A POSITA would also have known that by the 2010 priority date of the ’448 Patent, the premise of sending a URL from one phone to another (e.g., via SMS text message) while “continuing to engage in a voice session” was a ubiquitous, built-in behavior of all smartphones. However, in 2003, a method involving being on a phone call, telling someone else “hey, check out my

LinkedIn¹ profile, I'm texting you the link," and rendering that link on a mobile phone browser was not nearly as widespread as it was in 2010.

60. But texting a URL from one phone to another, or sending a URL from one computer to another, is not what Prajapat means by "co-browsing." Prajapat applies the label "co-browse" only to the dynamic web page sharing embodiment, in which web media server 14a fetches that web page from web content server 18, transforms it into an intermediate form, and sends that intermediate form to both web browser 12a and web media server 14b for forwarding to browser 12b. Prajapat at [0024-25]. Fetching the web page content once by a media server, transforming the content into an intermediate form, and sending that intermediate content to both browsers is how Prajapat achieves "browser 12a and browser 12b display[ing] the same web pages at substantially the same time," which is Prajapat's first example of "co-browse." Prajapat at [0012].

61. In contrast, in simple web page sharing, the web media server does not fetch web page content. Instead, browser 12a requests a web page and receives it directly from web content server 18, without any web media server intermediation. After receiving the web page content, the browser forwards the URL through its web media server 14a to another web media server 14b and

¹ Also for historical context, Prajapat's May 2003 filing predates most social media services, including Facebook and MySpace.

onward to another browser 12b, which at that point “may use the URL and any other suitable information to request from web content server 18 the web page that browser 12a requested.” Prajapat at [0043], FIG. 3. And in phone-to-phone web page sharing, one phone passes a URL to another directly, without using any intermediate components. Prajapat at [0045-0046], FIG. 4.

62. Prajapat does not describe either the simple web page sharing embodiment or the phone-to-phone web page sharing embodiment as a “co-browsing session” but only a “web page sharing session.” *Compare* Prajapat at [0041], [0046] (“web page sharing session”) with [0016] (“co-browsing session”). Furthermore, only the co-browsing, dynamic web page sharing embodiments of Prajapat are described as “synchronized.” Prajapat at [0030], describing the dynamic web page sharing embodiments.

63. Neither does Prajapat teach or suggest that either the simple or phone-to-phone web page sharing embodiments are synchronized in any way. For example, in the simple web page sharing embodiment, the first browser doesn’t forward the URL to the web media server (for forwarding on to the other web media server and then second browser) until after it has already received the web page. Prajapat at [0043]. That means the user of that first browser may be clicking or scrolling at the same time as the URL is being sent to the second browser. The

two browsers, even if they may be viewing some portion of the same web page, are not actually synchronized as that term is used in Prajapat. *See* Prajapat at [0030].

64. Also, the premise of sharing a web page URL with someone else while on remaining a phone call, as in Prajapat's phone-to-phone embodiment, implies that the callers would need to talk to each other in order to coordinate their user inputs ("okay, now scroll down three lines and click the 'submit' button.")

65. In my opinion, a POSITA would have understood that the co-browsing / dynamic web page sharing embodiment in Prajapat is incompatible with either the simple web page sharing or phone-to-phone web page sharing. In order to render a web page, a browser must obviously receive the web page content from somewhere. In dynamic web page sharing, the browser receives the content from a web media server that has already fetched it from the web content server; in simple or phone-to-phone sharing, the browser receives the content from the web content server directly. It would make no sense to combine the dynamic web page sharing embodiment with either the simple or phone-to-phone web page sharing embodiments because then the content would be fetched twice from the web content server, turned into an intermediate form once (by the web media server), and forwarded to the browser at the same time as the browser is receiving a non-intermediate form of the web page content directly from the web content server. Thus, the hypothetical combination would end with a browser receiving two

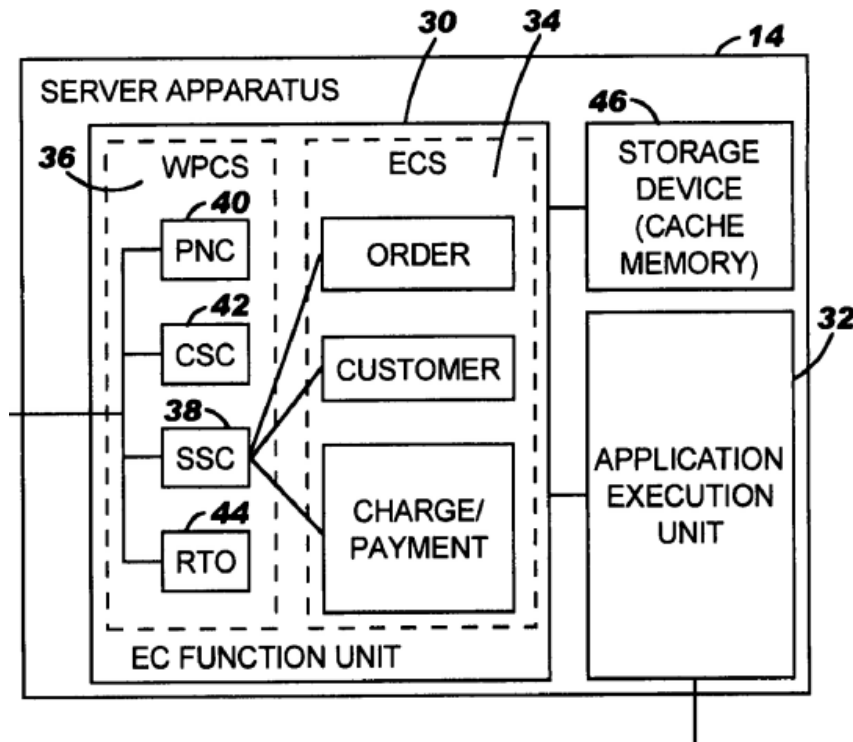
different versions of the same web page at the same time, which is a nonsensical result.

66. Further, it is clear from the figures in Prajapat that the dynamic web page sharing embodiment is distinct from the simple web page sharing or phone web page sharing embodiments. FIG. 1, corresponding to the dynamic web page sharing, is an entirely different architecture and message flow than FIG. 3 (simple web page sharing) or FIG. 4 (phone-to-phone web page sharing).

C. Wang

67. The Wang reference discloses a system wherein “when the web page is changed by a customer, the PNC 40 ... creates snapshot data Subsequently, the PNC 40 stores the snapshot data and the identification value in the server apparatus 14 in association with each other. The CSC 42 gives the web page or the snapshot data to the client devices among which the web page is to be shared, so that the same web page is displayed synchronously on the plurality of different client devices.” Wang at [0043]. Thus, the Wang reference discloses sharing webpage data, not web browser interaction data.

68. Moreover, the above passage refers to FIG. 2 of Wang which depicts the “Web Page Collaboration System (WPCS) 36 as part of the same server that is performing the snapshot distribution. Wang at [0042], FIG. 2.



IX. DISCUSSION

A. Lebrun

69. In my opinion, Petitioner’s reliance on Lebrun is misplaced. The Lebrun reference specifically discloses using a central group-surfing server for fetching webpage data and re-sending that data to participating group-surfing clients. That process is not within the scope of the claims of the ’448 Patent.

70. For example, the Petition identifies a “next-page message” that is sent from the “controlling web client” to the “group-surfing server” as meeting element [1.f], “transmitting information related to the shared web browsing interaction to the synchronization server.” Petition at 28-29. However, element [1.f.i] requires that the same information (i.e., the “next-page message”) is “to be processed by a

browser of the invitee device” and “enables the invitee device to generate a request.” However, Lebrun does not teach that the “next-page message” is ever received by the invitee device, let alone is processed by a browser of that invitee device or enables that device to generate any request. Instead, Lebrun teaches (and the Petition acknowledges) that it is Lebrun’s group-surfing server that sends the next page to each participating web client. Petition at 30.

71. The Petition also states that “[w]hen the ‘controlling web client’ chooses the ‘next page,’ the ‘program fragment’ on the other web clients uses this information to request the web page.” Petition at 30, citing Lebrun at 36:21-25, 45:21-46:5. I disagree with the Petition’s characterization of Lebrun. As a first point, the Petition fails to clarify what it means by “this information.” The cited passages in Lebrun teach that (a) a program fragment is loaded each web client, and (b) the group-surfing server may send “only the page 153 itself” to participating web clients, which would then be required to request “any multimedia elements” directly from the web site 130. Nothing in those passages teaches or suggests that the “next page” message identified by the Petition as meeting element [1.f] is ever sent to a participating web client, as required for element [1.f.i].

72. It appears that the Petition is (inconsistently) identifying Lebrun’s disclosure that a web client may, after receiving the partial web page (without multimedia elements), make a request to the web server to fetch those multimedia

elements. I disagree that this partial web page information could be the “information related to the shared web browsing interaction” claimed in element [1.f.i], because that information is claimed to be the **same** information transmitted by the host to the synchronization server in element [1.f]. Nothing in Lebrun teaches or suggests that partial web page information (without multimedia elements) is sent from a controlling web client to Lebrun’s group-surfing server and then re-sent to participating web clients, and the Petition does not argue as much. In fact, Lebrun teaches the opposite, namely that just a “next page” message is sent from a controlling web client, whereupon the “group-surfing server itself” is what fetches the web page (partial or otherwise) and then re-sends that page to participating web clients. Lebrun at 45:25-29.

73. Similarly, element [1.f.ii] requires “wherein the synchronization server transmits the information related to the shared web browsing interaction to the invitee device in response to receiving the information related to the shared web browsing interaction from the host device.” Both references to “the information related to the shared web browsing interaction” in that claim limitation refer to the antecedent in element [1.f], identified by the Petition as the “next-page message.” Petition at 28-29. As above, the Petition does not argue that the “next-page message” is ever transmitted from the synchronization server “to the invitee device in response to receiving” that message from the host device, as required by

the claims, and Lebrun does not teach or suggest that either. *See e.g.*, Petition at 31-32. However, the specification is clear that the claimed information is “forwarded” from the host device to the synchronization server and “relayed” to the guest devices. *See* ’448 Patent at 6:12-17.

74. Also, the Petition relies on a “program fragment” embodiment of Lebrun that does not fulfill all of the claim limitations. Lebrun teaches “[w]hen the controlling web client 110 selects a link 152 on the page 153, the selection is caught by the program fragment, which sends the selection to the group-surfing server 140.” Lebrun at 45:14-16. However, Lebrun goes on to say that the group-surfing server itself requests the webpage from the web site 130. Lebrun at 45:25-29. Therefore, when the Petition relies upon the “program fragment” embodiment to allege that Lebrun discloses element [1.d], the Petition necessarily acknowledges that Lebrun fails to disclose element [1.e], which separately requires that the host device (and not the synchronization server) “send[] a request for webpage content to a website server.” Put another way, Lebrun’s disclosure that a controlling web client’s link selection is “caught” means that Lebrun’s “program fragment” intercepts and redirects that link selection information to the group-surfing server, rather than recording that data for subsequent transmission to the synchronization server (as required by elements [1.d] and 1[f]) while also requesting that link from the website server (as required by element [1.e]).

B. Prajapat

75. In my opinion, like its reliance on Lebrun, Petitioner's reliance on Prajapat is misplaced. Prajapat discloses only one embodiment that it characterizes as "co-browsing," namely the "dynamic web page sharing" embodiment. As described above, the other embodiments of Prajapat are not taught to be "co-browsing" and relate only to methods that can be used for sharing links between participants, without any sort of synchronization. Uncoordinated sharing of links is plainly outside the scope of the claims.

76. Further, the Petition does not identify all elements of the claims in any one embodiment of Prajapat, instead it cherry-picks references from across the multiple embodiments without attempting to harmonize these distinct architectures or explain how a POSITA would have combined them to arrive at the invention claimed in the '448 Patent. As I discuss above, attempting to combine the "dynamic web page sharing" embodiment with either the simple web page sharing or phone-to-phone web page sharing embodiments would yield nonsensical results.

77. Further, with respect to the phone-sharing embodiment, which may require callers to speak to each other in order to coordinate user inputs, such an embodiment is antithetical to the '448 Patent's disclosure of a "synchronized browsing session" in which "two or more people may read the same article ...

without the hassle of coordinating user input.” ’448 Patent at 5:30-33, emphasis added.

78. Moreover, Prajapat’s dynamic web page sharing embodiment, which is the only embodiment described as “synchronized” or “co-browsing,” uses the very same system architecture that the ’448 Patent derides as “less appealing,” because it “require[s] high levels of bandwidth and computer processing power.” ’448 Patent at 2:30-34. Prajapat’s dynamic web page sharing requires first transforming the retrieved webpage into an “intermediate form” and then, for each browser in the web page sharing session, transforming that intermediate form “into a renderable form that may be rendered by [the] browser.” Prajapat at [0024-0026]. Among other aspects of that transformation is “each internal link in the renderable form may point back to a unique location on web media server 14b rather than web content server 18.” Prajapat at [0026]. In other words, Prajapat’s web media server is not only processing the transformation of web page content, it is now acting as the web server for the re-written links in the transformed “renderable form” web page, requiring even more processing and bandwidth when any of those links is clicked. Thus, Prajapat’s dynamic web page sharing embodiment suffers from precisely the prior art problem that the ’448 Patent seeks to solve. And Prajapat’s other embodiments (simple web page sharing, phone-to-phone web page sharing) do not teach co-browsing or synchronization, only

uncoordinated web link sharing. Therefore, in my opinion, a POSITA would not have looked to Prajapat when attempting to solve the problem identified by the '448 Patent.

79. The Petition inconsistently identifies elements in Prajapat when citing to claim elements in the '448 Patent. For example the Petition identifies “web media server 14a” as the “synchronization server” claimed in element [1.a]. Petition at 47. However, the Petition identifies “web media server 14b” as the “synchronization server” claimed in element [1.f.ii]. Petition at 57.

80. Additionally, the Board acknowledged that the Petition failed to identify all elements, specifically element [1.f.i], noting “[i]t is not readily apparent from Prajapat’s description ... that the other browsers are able to *generate a request* to retrieve substantially the same content [or] generate a request as required by the invitee device (limitation [1.f.i]).” DI at 51. I agree with the Board that the Petition failed to show that Prajapat meets limitation [1.f.i].

81. The Board also noted that the Petition asserted that Wang also disclosed limitation [1.f.i]. DI at 51. However, the Board did not address the Petition’s reliance on Wang. Moreover, as discussed further below, Wang discloses only a single server that performs both webpage serving functions and page synchronization functions. However, limitation [1.f.i] recites both “sending the request for webpage content to the website server” and “transmitting

information related to the shared browsing interaction to the synchronization server.” Therefore, the Petition improperly relies upon the same server in Wang to fulfill both the “website server” and “synchronization server” distinctly claimed in [1.f.i].

C. Wang

82. The Petition relies upon combining the Wang reference with either Lebrun or Prajapat in the grounds for challenge. The Petition does not argue that either Lebrun or Prajapat alone anticipate the challenged claims.

83. The petition never states what it contemplates for the combinations of Wang with either reference. I understand that it is improper to cherry-pick words or phrases from multiple references and assume that the combination of those references is sensible. But the Petition has not clearly set forth what it envisions the combinations of either Lebrun with Wang or Prajapat with Wang to be.

84. As above, Wang discloses a system where a central server fetches webpage data and sends that data to web clients. Lebrun does this as well, so to the extent Lebrun and Wang were combined, the result would still be a system where a central server fetches webpage data and sends that data to web clients. The claims of the '448 Patent are unrelated to such a system.

85. The Petition relies upon Wang for several embodiments. For example, the Petition identifies Wang’s “server apparatus” with a “synchronization

control unit” as the claimed “synchronization server” in element [1.a]. Petition at 23. However, element [1.e] requires “sending a request for webpage content to a website server independent of the synchronization server.” The Petition fails to identify any independent website server in Wang, nor could it, because Wang is explicit that all of its functionality is embodied in the same “server apparatus.” Wang at [0042]-[0044], FIG. 2. Moreover, Wang teaches that “FIG. 5 is a flowchart that shows the processing of the server apparatus that allows the client devices to share the web page after the plurality of sessions are established” and describes how the same server apparatus handles both “page synchronization” and “transmit[ting] the data of the web page.” Wang at [0054]-[0055]. Therefore, Wang fails to disclose the website server independent of the synchronization server claimed in element [1.e].

86. Similarly, the only embodiment in Prajapat that is related to “co-browsing” or “display[ing] the same web pages at substantially the same time” is Prajapat’s dynamic web page sharing embodiment, which relies upon sending “intermediate forms” of webpage data between multiple servers and to web clients. Combining Prajapat with Wang would therefore result in a system where one or more central servers fetches webpage data and sends that to web clients. The claims of the ’448 Patent are unrelated to such a system.

87. In my opinion, a POSITA would not have been motivated to combine Wang with either Lebrun or Prajapat due to the incompatible system architectures and purposes. Wang's system is designed to store a snapshot of page data locally to the server performing the synchronization and distribute that snapshot data to participating client browsers. Specifically, "the synchronization control means 24 acquires snapshot data ... passes the data to the browser means 20, and allows the data to be displayed on the display screen of the display unit. Note that the snapshot data may be an HTML file, an XML file, or an SGML file, all of which may have already been compiled by linking text, hypertext, image data and the like together." Wang at [0061]. Wang teaches that a single server that "creates a group session, and passes snapshot data of a web page" is what enables "the client devices 12a and 12b to browse the same web page." Wang at [0040], [0043].

88. In contrast, Lebrun teaches that "[i]n a preferred embodiment, in order to reduce load on the group-serving server 140, the group-serving server 140 sends only the page 153 itself without any multimedia elements (such as embedded sound, images, or program fragments)." Lebrun at 45:31-46:1. Therefore, a POSITA would think that Lebrun's preferred embodiment of sending "only the page 153 itself without any multimedia elements (such as ...images)" teaches away from the snapshot data of Wang that is "compiled by linking text, hypertext, image data and the like together."

89. Similarly, Prajapat teaches a system of distributing “intermediate forms” to multiple “web media servers,” each associated with a browser, and having each web media server create a specific “renderable form” for its associated browser. Prajapat at [0025-26]. In my opinion, a POSITA would not have been motivated to combine an architecture like Prajapat, having multiple “web media servers” and a different “renderable form” for each browser, with the system of Wang that has a single server and compiles the same snapshot data for all browsers, because those system architectures are incompatible alternatives. A POSITA would have understood that a system can either use a single server or multiple servers, but it cannot do both simultaneously. Similarly, a POSITA would have understood that the system can produce either single snapshot data or multiple renderable forms, but it cannot do both simultaneously.

D. Dependent Claims

90. Claim 6 requires “wherein the information related to the shared web browsing interactions comprises a URL, form data, cookie information, or script data.” The Petition identifies only two passages in Lebrun for this limitation that together disclose (a) a web client can import or export cookies (Lebrun at 41:9-10) and (b) the group-surfing server can receive a cookie in a web response and use that cookie in subsequent requests. Petition at 42, citing Lebrun at 41:9-10, 46:7-11.

91. As discussed above, a POSITA would not have thought an import/export operation was related to a synchronized browsing session as claimed. For example, after the passage cited by the Petition, Lebrun teaches that “web clients 110 participating in the session can choose whether or not to participate in these import or export operations.” Lebrun at 41:11-12. That means the transmission of a cookie is an optional operation and therefore at a minimum, does not fulfill element [1.f.ii] which requires “wherein the synchronization server transmits the [cookie] to the invitee device in response to receiving the [cookie] from the host device.” Element [1.f.ii], substituting “cookie” for the claimed “information related to the shared web browsing interaction.” Further, Lebrun does not suggest (nor does the Petition argue) that an exported cookie “is to be processed by a browser of the invitee device and enables the invitee device to generate a request to retrieve substantially the same webpage content as the request for the webpage content from the host device” as required by element [1.f.i] because the identified cookie, by itself, is neither taught to be processed by a browser nor sufficient to make any request.

92. Moreover, Lebrun’s disclosure that a group-surfing server (identified as the claimed “synchronization server”) receives a cookie from a website or uses a cookie to make a web request is not related to the claim language, because the

claims do not relate to a synchronization server making web requests or receiving cookies in web responses.

93. Neither of the cited passages demonstrates that the cookies discussed in Lebrun can be the antecedent “information related to the shared web browsing interactions” from the parent claim, which as discussed above is found in elements [1.f], [1.f.i], [1.f.ii], [1.f.iii], and [1.g]. Lebrun does not disclose the use of a cookie for any of those claimed steps, let alone all of them together.

94. The Petition identifies only one passage in Prajapat related to Claim 6, namely that a “request for a web page” may include cookies. Petition at 68, citing Prajapat at [0017]. This fact was well-known but is not relevant to the claims, which expressly distinguish “information related to the shared web browsing interaction” from “a request to retrieve ... webpage content.” As with Lebrun’s cookie above, the Petition fails to show that the cookie described in Prajapat could be the claimed “information related to the shared web browsing interactions” in the parent claim.

95. Claims 8 and 14 require that “the web browsing window is capable of accepting both shared and non-shared web browsing interactions. The Petition cites a passage in Lebrun that relates to which web pages are “presented to other web clients.” Petition at 43, citing Lebrun at 38:21-27. Thus, Lebrun discloses that the controlling web client can select which pages are shared. This is unrelated

to the claimed “web browsing window [being] capable of accepting both shared and non-shared web browsing interactions” because a web browsing interaction is not a web page. The antecedent for “the web browsing window” is found in the parent claims as “determining that a web browsing interaction of the host device within a web browsing window is a sharable web browsing interaction.” Lebrun’s disclosure that a *user* may determine whether to share a page is unrelated to the claim requirement that the *host device* determines that a web browsing interaction that occurs within a browsing window is itself sharable.

96. Moreover, Lebrun discloses that the controlling web client may select “web pages” for special access, and may either share them or not. That means web browsing interactions on that page are either shared or not shared, which does not satisfy the claim requirement that “the web browsing window is capable of accepting **both** shared and non-shared web browsing interactions.”

97. The Petition identifies only one passage in Prajapat related to Claims 8 and 14, namely that a user “may also desire to co-browse or share the one or more web pages ... with another user” Petition at 69, citing Prajapat at [0016]. But the desire of one user to share a webpage with another is not disclosure of *how* those webpages are shared, especially not whether the web browsing window is capable of accepting both shared and non-shared web browsing interactions as claimed. More fundamentally, sharing a web page is not equivalent to sharing a

web browsing interaction because a web browsing interaction is not a web page, so the described desire of Prajapat's users to share web pages is irrelevant.

98. For Claims 9 and 15, the Petition cites to passages in Lebrun related to both "look ahead" or "special access" functionality. Petition at 43, citing Lebrun at 6:19-32, 37:27-38:27. The citation to Lebrun page 6 appears to be erroneous as that page is unrelated to the "group-surfing" embodiment disclosed elsewhere. In either "look ahead" or "special access" functionality, Lebrun teaches how a user may decide to share a web page, not how or when a user may decide to share a web browsing interaction.

99. The Petition also cites to two passages in Prajapat, one relating to the user's desire to share pages and the other relating to registering "without actually sharing web pages with another browser." Petition at 69 citing Prajapat at [0016], [0034]. But the user's desire to share a web page, and the process of "registering without sharing web pages," are unrelated to the claim limitations of depicting determined non-shared web browsing interactions of the host device in a non-shared web browser window as claimed. For example, neither cited passage in Prajapat discloses a browser window or the distinction between a shared and non-shared browser window.

100. For Lebrun, the Petition argues that "a user must necessarily first view that page in a non-shared browser in the 'web client' prior to deciding to share that

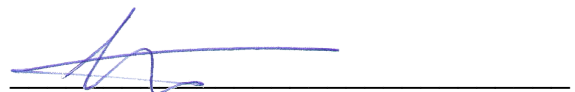
web page.” Petition at 43. For Prajapat, the Petition similarly argues that “when a ‘user’ desires to ‘share the or more webpages’ to another, the user must necessarily first view the web pages in a non-shared browser window prior to deciding whether to share that web page.” Petition at 69. The Petition thus acknowledges, for both Lebrun and Prajapat, that it is the user deciding to share a web page and depicting that page itself in a separate window, rather than the host device determining which web browsing interactions are non-shared and depicting them in a separate non-shared browser window as claimed.

101. In general, a POSITA would understand that both Lebrun and Prajapat fail to disclose the claimed shared web browsing interaction, and therefore necessarily fail to disclose distinguishing between shared and non-shared web browsing interactions or shared and non-shared web browser windows (or a window capable of accepting both).

102. For the reasons set forth above, it is my opinion that the challenged claims would not have been obvious to a POSITA and remain patentable over the references and grounds presented by the Petitioner.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct to the best of my knowledge.

Executed this 27th day of September 2023 in Lake Oswego, Oregon.



Stacy Friedman

EXHIBIT A

STACY A. FRIEDMAN

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SUMMARY

Creative technology product consultant with over 25 years' experience in product design, development, and IP strategy across several industry sectors, including enterprise software, mobile and online gaming, and casino gambling. Harvard degree in computer science, *magna cum laude*. Key product design resource for several small technology companies leading to over \$500M in total M&A activity.

Named inventor on over 30 U.S. Patents. Managing an IP portfolio of several dozen assets including patents and trademarks. *Pro se* and counsel-assisted patent prosecution including initial specification/claims drafting, office action responses, and appeal brief drafting. Successfully negotiated several IP transactions.

Subject matter expert consulting and expert witness testimony in over 65 disputes or litigations in US and internationally (Canada, UK, Australia, Costa Rica). Matters include patent infringement, trade secret misappropriation, USPTO proceedings (IPR, CBM, PGR, *ex parte* reexamination), breach of contract, criminal proceedings, and pre-litigation analysis. Over 100 written expert reports or declarations. More than 30 appearances at deposition, hearing or trial, including appearances in U.S. district courts, U.S. state courts, and patent courts in UK and Canada.

Expert analysis tasks included: patent acquisition advice, software source code analysis, review of specialty hardware (regulated gaming equipment), game mathematics analysis, technical systems analysis, prior art search/analysis, regulatory/legal compliance analysis, patent claim construction, patent validity and infringement, trade secret analysis, trade secret reverse engineering, gaming operations data, analysis of other experts' opinions.

EXPERT CONSULTANT EXPERIENCE

TNT Entertainment v Torch Electronics, gaming machine evaluation

Client: Bryan Cave for plaintiff. Analysis: gaming machine functionality in view of state law. 2023-ongoing.

Gaming machine evaluation

Client: counsel for plaintiff. Analysis: gaming machine functionality in view of state law. 2023-ongoing.

Patent infringement, gaming technology

Client: counsel for defendant. Analyses: infringement, source code. 2022-ongoing.

Patent infringement, wagering systems and methods

Client: counsel for defendant. Analyses: claim construction, validity. 2022-ongoing.

Patent infringement, casino management systems

Client: counsel for defendant. 2022-ongoing.

Acres 4.0 v IGT, patent infringement, casino management systems

Client: Baker Hostetler for defendant. Analyses: infringement, practicing product, source code. Testimony: declaration. 2022-ongoing.

IGT v Zynga, patent infringement, networked gaming systems

Client: Baker Hostetler for plaintiff. Analyses: validity, infringement, source code. Testimony: declaration, deposition. 2022-ongoing.

Zynga v IGT, IPR, gaming systems and methods

Client: Baker Hostetler for patent owner. Analyses: claim construction, validity. Testimony: declaration, deposition. 2022-ongoing.

Acquisition consultation, networked gaming patents

Client: patent acquisition/monetization firm. Analyses: infringement claim charts, validity in view of same. 2022.

Schuster v. Wynn Resorts, TITO ticket redemption practices

Client: Garick Law for plaintiff. Analyses: contracts, documentary evidence, financial data. Testimony: declaration, deposition. Case dismissed. 2022-2023.

Fortunet v. Playbook Publishing, misappropriation of trade secrets, proprietary wagering methods

Client: Hartwell Thalacker for plaintiff. Analysis: comparison of both parties' wagering methods. Testimony: trial. 2022-2023.

Epic Tech LLC v. Pen-Tech LLC, patent infringement, networked gaming systems/methods

Client: Fisher Broyles for defendant. Analyses: claim construction, validity, infringement. Testimony: declaration, hearing. 2021-ongoing.

Zenergy Systems, LLC v. Everi Payments, Inc., breach of contract, casino charitable donation systems

Client: Pisanelli Bice for defendant. Analyses: contracts, documentary evidence, prior art, source code. Testimony: deposition. 2021-ongoing.

Pre-litigation analysis, networked gaming technology

Client: counsel for potential defendant. Analyses: validity, infringement. 2021.

Copyright infringement, mobile gaming systems

Client: counsel for defendant. Analyses: comparison of parties' products. 2022-ongoing.

Skillz Platform, Inc. v AviaGames, Inc, patent infringement and IPR, networked gaming systems/methods

Client: Perkins Coie for defendant/IPR petitioner AviaGames. Analyses: claim construction, validity, infringement, source code. Testimony: declaration. 2021-ongoing.

Interactive Communications Int'l, Inc. v. Blackhawk Network, Inc., PGR, lottery system

Client: Cooley for patent owner. Analyses: claim construction, validity. Testimony: declaration, deposition. Disposition: patent claims found unpatentable. 2021-2022.

Playtika Ltd. v. NEXRF Corp., IPRs, networked gaming systems/methods

Client: Finnegan, Henderson for petitioner. Analysis: validity. Testimony: declarations, deposition. Disposition: Terminated after ineligibility appeals waived. 2021-2022.

MQ Gaming v. LEGO Systems, patent infringement and IPR, networked gaming systems/methods

Client: Finnegan, Henderson for plaintiff/patent owner MQ Gaming. Analyses: validity, infringement, source code. Disposition: confidential settlement. 2020-2021.

GREE v. Supercell Oy, patent infringement, networked gaming systems/methods (multiple matters)

Client: Fenwick & West for defendant. Analyses: claim construction, validity, infringement, source code. Testimony: declarations, depositions, trials. Dispositions: Jury verdicts for plaintiff, then confidential settlement. 2019-2021.

INAG, Inc. v. Richar, Inc., patent infringement, casino gaming equipment

Client: Fisher Broyles for defendant. Analyses: claim construction, validity, infringement. Testimony: deposition. 2020-ongoing.

Epic Tech LLC v. Fusion Skill, Inc. et al., patent infringement, electronic sweepstakes machines

Client: Dunlap Coddling for defendant Texas Wiz. Analyses: validity, infringement, source code. Testimony: declarations, deposition. Disposition: Asserted patents found ineligible. 2020-2022.

Patent infringement, electronic gaming machines

Client: counsel for defendant. Analysis: validity. Case stayed. 2020.

Bot M8 LLC v. Sony Corporation of America, patent infringement, networked gaming system

Client: Kramer Levin Naftalis & Frankel for plaintiff. Analyses: validity, infringement, source code. Testimony: declarations, deposition. Disposition: Asserted patent found ineligible. 2019-2020.

Savvy Dog Systems LLC v. Pennsylvania Coin LLC, patent infringement, pre-reveal gaming machines

Client: Morgan, Lewis & Bockius for defendant. Analyses: claim construction, validity, source code. Testimony: declaration, deposition. Disposition: Asserted patent found ineligible. 2019-2022.

Tipping Point Gaming v. Caesars Entertainment, trade secret misappropriation, casino system

Client: Greenberg Traurig for defendant. Analyses: trade secret, prior art. Disposition: claims dismissed with prejudice. 2019.

MGM National Harbor v. Markel Insurance, damage assessment, electronic gaming machines

Client: DeCaro Doran for defendant. Analyses: gaming machine evaluation after water damage, financial damages. Disposition: satisfactory settlement. 2019-2022.

Aristocrat v. Ainsworth, trade secret misappropriation, gaming machine technology

Client: Gilbert + Tobin for plaintiff. Analyses: forensic par sheet examination, mathematical analysis. Disposition: confidential settlement. 2019-2020.

Treehouse Avatar v. Valve Corp., patent infringement, networked gaming system

Client: plaintiff. Analyses: validity, infringement, source code. Testimony: deposition. Disposition: case dismissed. 2018-2021.

FigureFun LLC v. LEGO Systems, patent infringement and IPR, electronic gaming machines

Client: plaintiff/patent owner. Analyses: claim construction, validity. Testimony: declarations. Disposition: Final written decision. 2018-2019.

Bookman v. Resorts World Casino, Genting New York and Int'l Game Technology (IGT), breach of contract & negligence, slot machine abnormality/withheld jackpot

Client: Alan Ripka for plaintiff. Analysis: forensic gaming machine investigation. Testimony: expert affidavit. 2018.

IPR, networked gaming system

Client: counsel for patent owner. Analysis: validity. Removed from case. 2017-2018.

Aristocrat Technologies v. High 5 Games, IPR, slot machine method

Client: Covington & Burling for petitioner. Analysis: validity. Testimony: declaration, deposition. Disposition: all claims unpatentable. 2017-2019.

Video Gaming Technologies (VGT) v. Castle Hill Gaming, misappropriation of intellectual property, Class II gaming machines

Client: Covington & Burling for plaintiff. Analyses: Class II gaming machine functionality, trade secret, trade dress, source code. Testimony: declarations, deposition. Disposition: public settlement of \$3M. 2017-2019.

Kentucky Horse Racing Commission, et al. v Family Trust Foundation of Kentucky, compliance investigation, electronic gaming machines

Client: Stoll Keenon Ogden for petitioner Keeneland Association. Analyses: behavior of historical horse racing (HHR) machines in view of regulations and state court opinions. 2015-2018.

Int'l Game Technology (IGT) v. Aristocrat Technologies, patent infringement, gaming machines

Client: Covington & Burling for defendant. Analysis: validity. Testimony: declarations. Disposition: confidential settlement. 2015-2016.

AmTote International v. Kentucky Downs, misappropriation of intellectual property, networked gaming system

Client: Gilbert's LLP for plaintiffs AmTote and PariMAX. Analysis: historical horse racing (HHR) machines, system architecture, pari-mutuel mathematics, trade secret. Disposition: confidential settlement. 2015-2018.

IGT v. AmTote International, patent infringement (pre-litigation), networked gaming system

Client: Gilbert's LLP for defendant. Analysis: validity. Disposition: litigation averted due to my analysis. 2015.

International Internet Technologies, LLC v. Sweepstakes Patent Company, LLC, CBM review, networked gaming system

Client: Schneider Rothman for patent owner. Analyses: validity, infringement. Testimony: deposition. Disposition: patent found invalid during CBM review. 2015-2016.

Abnormality analysis, networked gaming machines

Client: counsel for defendant. Analyses: log file, source code. Disposition: confidential settlement. 2015-2016.

MEI-GSR Holdings, LLC d/b/a Grand Sierra Resort v. Peppermill Casinos, Inc., misappropriation of trade secrets, slot machine par settings

Client: Robison, Belaustegui, Sharp & Low for defendant. Analyses: trade secret, reverse engineering, damages. Testimony: trial. Disposition: jury verdict for defendant. 2014-2016.

MGT Gaming v. Aruze, patent infringement, slot machine system

Client: Watson Rounds for defendant. Analyses: claim construction, validity. Testimony: declaration. Disposition: confidential settlement. 2014-2015.

SHFL Entertainment v. GTECH, patent infringement, online gaming system

Client: McCarter & English for defendant. Analysis: claim construction, validity. Disposition: confidential settlement. 2014.

Stephenson v. Worldwinner, IPR, networked tournament system

Client: Merchant & Gould for patent owner. Analyses: claim construction, validity. Testimony: declaration, deposition. Disposition: patent invalid for anticipation. 2013-2015.

Agincourt Gaming v. Zynga, patent infringement, network gaming system

Client: Quinn Emanuel Urquhart & Sullivan for defendant. Analysis: validity. Disposition: confidential settlement. 2013-2014.

eLot v. GTECH, patent infringement, networked lottery system

Client: Finnegan, Henderson, Farabow, Garrett & Dunner for defendant. Analysis: validity. Disposition: confidential settlement. 2013.

Big Daddy Games v. Reel Spin Studios, copyright infringement, gaming machines

Client: Michael Best for defendant. Analysis: graphical assets, source code. Testimony: declaration, deposition. Disposition: confidential settlement. 2012.

Seneca Nation of Indians v. State of New York, regulatory dispute, video lottery terminals

Client: Kanji & Katzen / Harter Secrest & Emery for plaintiff. Analyses: hardware functionality, network protocol, gameplay, regulatory. Testimony: sworn witness statement, hearing. Disposition: public settlement of over \$600M dispute. 2012-2013.

Safe Gaming System Inc. v. Atlantic Lottery Corp., patent infringement, networked gaming system

Client: Borden Ladner Gervais for defendant. Analyses: claim construction, validity, infringement. Testimony: trial in Federal Court of Canada. Disposition: dismissal / judgment for defendant. 2012-2018.

eLot v. Atlantic Lottery Corporation, patent infringement, Internet lottery system

Client: Borden Ladner Gervais for defendant. Analyses: claim construction, validity. Disposition: favorable settlement shortly after my report was submitted. 2012-2014.

Fortunet v. Playbook Publishing, misappropriation of trade secrets, proprietary wagering methods

Client: Watson Rounds for plaintiff. Analysis: comparison of both parties' wagering methods. Testimony: trial. Disposition: jury verdict partly in favor of plaintiff. 2011-2013.

McKee v. Isle of Capri Casinos, breach of contract & consumer fraud, slot machine abnormality/withheld jackpot

Client: Donnelly Nelson Depolo Murray for plaintiff. Analysis: slot machine forensic report. My engagement was terminated when I disputed counsel's technical interpretations. Disposition: summary dismissal. 2011-2012.

Legal iGaming / Zynga v. Int'l Game Technology (IGT), patent interference, networked gaming system

Client: Morrison Foerster for senior party defendant. Analysis: claim construction, validity. 2011.

Gaming patent review (pre-litigation/confidential), networked gaming machine methods

Client: Counsel for potential plaintiff. Analyses: prior art research, validity, infringement. 2011.

Lottotron v. Allgames Casino, patent infringement, remote wagering system

Client: Stadheim Gear for plaintiff. Analyses: damages for defaulting defendants. Testimony: declaration, hearing. Disposition: plaintiff awarded damages over \$14M. 2011.

WMS Gaming v. Bally Technologies, patent infringement, slot machine technologies

Client: Quinn Emanuel Urquhart & Sullivan for defendant. Analyses: validity. Disposition: confidential settlement. 2011.

Lottotron v. EH New Ventures, patent infringement of remote wagering system

Client: Stadheim Gear for plaintiff. Analyses: infringement. Testimony: declarations, deposition, trial. Disposition: jury verdict for defendant. 2010-2012.

Compliance investigation, charitable bingo machines

Client: Thunderbird Casino, Costa Rica. Analyses: investigation of gameplay on electronic bingo machines, comparison to regulatory language. Written report submitted to national legislator. 2010-2011.

Compliance investigation, charitable bingo machines

Client: Alabama Attorney General. Analyses: investigation of of gameplay on multiple manufacturers' electronic bingo machines in view of Alabama Supreme Court ruling, pre-litigation technical support. Disposition: project terminated due to Governor's intervention. 2010.

State of California v. Wilkins, theft, casino loyalty club points

Client: Public Defender, Humboldt County, CA for defendant. Analyses: evaluation of casino accounting data, damages calculation. Disposition: case settled for the amount I calculated. 2009-2010.

Dottie Janousek v. Canyon Casino, breach of contract, slot machine abnormality/withheld jackpot

Client: Helmer McElyea for plaintiff. Analysis of slot machine forensic report. Disposition: based on my analysis, plaintiff received satisfactory settlement. 2009.

Golden Route v. Ardent Gaming, breach of contract, casino accounting system

Client: John Peter Lee for defendant. Analyses: contract language, software specification, system data. Disposition: confidential settlement. 2009.

Cranway v. Playtech (United Kingdom), patent infringement, online gaming system

Client: Herbert Smith for plaintiff. Analyses: infringement, validity. Testimony: declaration, trial in High Court in London. Disposition: patent found invalid. 2008-2009.

International Gamco v. Multimedia Games, patent infringement, video lottery system

Client: Luce, Forward, Hamilton & Scripps for defendant. Analyses: infringement, validity. Testimony: declarations, deposition. Disposition: summary judgment for defendant. 2006-2010.

Aristocrat Technologies v. Multimedia Games, patent infringement, video lottery machines

Client: Luce, Forward, Hamilton & Scripps for defendant. Analyses: infringement, validity. Testimony: declarations, deposition. Disposition: settled in favor of defendant shortly after my deposition was taken. 2006-2008.

HomeBingo v. Multimedia Games, patent infringement, electronic bingo system

Client: Fish & Richardson for defendant. Analyses: claim construction, infringement, validity. Testimony: declaration. Disposition: settled in defendant's favor after claim construction order. 2006-2007.

State of Mississippi v. (unknown defendant), felony cheating at gambling

Client: Mississippi Gaming Commission. Analysis: statistical evidence for cheating vs. probability of random outcomes. Disposition: indictment handed down by grand jury. 2005.

PUBLICATIONS AND MEDIA INTERVIEWS

April 2014	Web radio interview for Casino Enterprise Management podcast "Casino Talk with Brooke Dunn" regarding new casino game concepts.
January 2011	Video interview for CBS News show "60 Minutes" regarding video slot machine gameplay. Published on the CBS News website.
March 2010	Written article in Casino Journal: "Gaming's Greatest Hits: 6 Ideas that Changed the Industry"

March 2007 Radio interview for National Public Radio show “Justice Talking” regarding slot machine design and mathematics.

WORK AND BOARD EXPERIENCE

- 2001-present **OLYMPIAN GAMING, LLC**, Lake Oswego, OR
Gaming industry consulting, intellectual property consulting and game development
President
- Developed profitable consulting practice around casino gameplay development and analysis, including custom software simulation and analysis
 - Designed slot game models and new game features for land-based and online gaming vendors. Client list includes WagerWorks (IGT), Chartwell Technology, Parlay Entertainment, Diamond Game, Phantom EFX, and DEQ Systems.
 - Designed and/or analyzed keno, bingo, lottery, blackjack, craps, roulette, poker, video poker, and many novel gaming propositions
 - Social game design and virtual economy design for casual mobile or web games
 - Advised clients in IP strategy, including patent clearance and potential design-arounds
 - Provided expert witness testimony in many gaming-related lawsuits
 - Developed IP portfolio including over 30 issued US patents and several trademarks
 - Executed IP licenses with several casino operators and gaming vendors
 - Held licenses from Washington State Gambling Commission and Nisqually Tribal Gaming Commission; achieved regulatory game approvals in WA, NV, MS.
- 2014-2020 **CONGREGATION BETH ISRAEL**, Portland, OR
Board Treasurer, 2018-2020
Member, Board of Trustees, 2014-2018
- 2011-2013 **DOUBLE DOWN INTERACTIVE / INTERNATIONAL GAME TECHNOLOGY**, Seattle, WA
Social casino operator
Game Design Consultant / Gaming Strategist
- Redesigned and corrected casino game implementations for DDI's social casino game website
 - Led casino-industry education efforts for non-casino casual games staff
 - Designed all of DDI's casino gameplay prior to its \$500M acquisition by IGT
 - Product integration between DDI's social games platform and IGT's slot machine content
 - Internal gaming expert for evaluating new product submissions and patent filings
- 2011-2014 **VIZKINECT**, Reno, NV
A visual data capture and analysis company
Member, Board of Advisors
- Advising early-stage technology company on strategic direction and application of biometric capture technology, including eye tracking and galvanic skin response, across several verticals
- 2006-2008 **NIKE**, Beaverton, OR
A leading athletic footwear and apparel brand
Senior Enterprise Architect
- Delivered service-oriented architecture (SOA) strategy and web service solutions
 - Facilitated application and service architecture for key eCommerce initiatives
 - Resulted in over \$1.4M in incremental revenue in first quarter after go-live
 - Authored and delivered executive-education presentations on SOA and Web 2.0 collaboration
- 2003-2005 **SYSTEMS RESEARCH AND DEVELOPMENT** (acquired by IBM), Las Vegas, NV
A boutique software consultancy and developers of a fraud/collusion detection platform
Senior Software Engineer and Technical Consultant
- Developed high-throughput data analysis software for use in identifying casino cheating rings and international terrorist cells: prevented at least two domestic terrorist incursions
 - Derived computational algorithms for uncovering connections in biographical data
 - Improved processing efficiency and throughput by 66%
 - Directed technical team during onsite implementation of secure web services for DoD/U.S. Navy Horizontal Fusion initiative, and provided military-spec technical documentation.
 - Successful deployment resulted in \$90M acquisition by IBM

- 2002-2003 **PLUMTREE SOFTWARE** (acquired by BEA), San Francisco, CA
A pure-play portal software vendor
Senior Software Engineer
- Delivered web service-based portal application (portlet) SDK for both Java and MS .NET
 - Contributed to over \$50M in portal software sales
 - Delivered .NET custom controls and Visual Studio plug-ins for no-code portlet development
 - Contributed to web standards committees and helped architect remote portlet infrastructure
- 2000-2001 **RAPT** (acquired by Microsoft), San Francisco, CA
A supply-planning and pricing optimization software vendor
Technical Implementation Engineer
- Managed client integration for software implementations at Sun Microsystems and H-P
 - Resulted in top-line uplift of \$30M/quarter or roughly 2% revenue growth
 - Developed custom SQL and PL/SQL database extraction/reporting software to deliver real-time intelligence to supply planning staff
 - Resulted in \$15M/quarter cost reduction or roughly 2% profit growth
- 1998-2000 **SILICON GAMING** (acquired by IGT), Palo Alto, CA
A casino slot machine manufacturer
Game Model Engineer
- Self-education in probability theory and combinatorics led to successful employment as a casino gaming mathematician
 - Designed game flow and storyboards for slot machines, and developed and shipped over 50 mathematical game models
 - Resulted in sales of hundreds of slot machines and over \$10M in revenue
 - Managed statistical verification and mathematical gameplay testing
 - Liaison to state regulatory agencies; corrected prior errors in gaming lab submissions
 - Saved over \$50,000 in regulatory fees
- 1996-1998 **ORACLE**, Redwood Shores, CA
A leading database and application software vendor
Software Engineer / Senior Software Engineer
- Responsible for final-tier maintenance engineering for premier Oracle clients
 - Proposed and achieved consensus on enhancements to worldwide support process, and rolled out new process within my own organization.
 - Resulted in 50% decrease in defect reports and 10% increase in CSR response
 - Earned promotion to Senior Engineer within 12 months
 - Managed scalability and performance testing process, and designed scalability test suite
 - Directed performance testing during pre-sales engagement with the Norwegian tax authority
 - Resulted in a 10-year, \$3.5M license

EDUCATION

- 1992-1996 **HARVARD UNIVERSITY**, Cambridge, MA
Bachelor of Arts in Computer Science, *magna cum laude*
- John Harvard and Harvard College scholarship awards
 - “Empirical Testing of Algorithms for Variable-Sized Label Placement” published in 1997 Journal of the Symposium on Computational Geometry

EXHIBIT B

EXHIBIT B

Declaration of Stacy Friedman, IPR2023-00341

Materials Reviewed

1. U.S. Patent No. 9,483,448 and file history
2. December 16, 2022 Petition for *inter partes* review (“Petition”)
3. December 16, 2022 Declaration of Henry Lieberman in support of Petition, including materials considered
4. April 20, 2023 Patent Owner preliminary response
5. June 28, 2023 Board Institution Decision (“DI”)
6. Lebrun reference, PCT application WO 00/48110
7. Prajapat reference, US Patent Publication No. US 2005/0021626
8. Wang reference, U.S. Patent Publication No. US 2005/0033656
9. U.S. Patent No. 5,774,670 to Montulli