

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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APPLE INC.,

Petitioner

v.

SMITH INTERFACE TECHNOLOGIES, LLC

Patent Owner

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Case IPR2024-01090

Patent No. 10,725,581

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**DECLARATION OF MARC DAVIS, Ph.D.**

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## **I. INTRODUCTION**

1. My name is Dr. Marc Davis, Ph.D. I have been retained by Smith Interface Technologies, LLC as an independent expert consultant in this inter partes review (“IPR”) proceeding before the United States Patent and Trademark Office (“PTO”).

## **II. PROFESSIONAL BACKGROUND**

2. All of my opinions stated in this Declaration are based on my own personal knowledge and professional judgment. In forming my opinions, I have relied on my knowledge and experience in designing, developing, researching, and teaching the technology referenced in this Declaration.

3. I am over 18 years of age and, if I am called upon to do so, I would be competent to testify as to the matters set forth herein. I understand that a copy of my current curriculum vitae, which details my education and professional and academic experience, is being submitted as EX2002. The following provides a brief overview of some of my experience that is relevant to the matters set forth in this Declaration.

4. In 1984, I received my Bachelor of Arts degree in College of Letters at Wesleyan University in Middletown, Connecticut. I then received my Master of Arts degree in Literary Science and Philosophy in 1987 at the University of Konstanz in Germany. During my time at the University of Konstanz, I also worked

as a Research Coordinator in the Literary Science department where I initiated and managed computerization of a large scale, multiyear Intertextuality Research Project. Later, in 1990, I pursued my doctorate in Media Arts and Sciences at the Massachusetts Institute of Technology (MIT) Media Laboratory. This program focuses on the invention, study, and creative use of new technologies and draws on a number of other disciplines, including computer science, cognitive sciences, communications, design, and the expressive arts. For 5 years, I also worked as a research assistant in the MIT Media Laboratory, where I worked on various multimedia, user interface, and AI technologies in digital applications with a focus on iconic visual language interfaces and systems for video annotation, retrieval, and repurposing. I received my Doctor of Philosophy in Media Arts and Sciences from MIT in 1995.

5. For 5 years, partially overlapping my PhD program, I served as a Project Coordinator for Interval Research Corporation, a research laboratory created by Paul Allen, the Co-Founder of Microsoft. My role included leading and contributing to the technical and user interface development of digital media technologies, including media automation applications, visual language programming tools, and media interfaces and systems. During this time, my responsibilities also included researching other digital projects, including various

interactive applications. It was at Interval Research where I first began patenting my inventions, leading to over 240 patents in my career.

6. I then served as Chief Technology Officer and Co-Founder of Amova, which focused on the development of media automation and personalization technology. In my role, I was responsible for the technical research and development of innovative personalized media systems and applications. My focus included the design of user interfaces for multimedia websites and location-based live interactive multimedia systems.

7. From 2002 to 2006, I served as Assistant Professor at the UC Berkeley School of Information where I initiated and directed various media related research and development projects that involved user interfaces and user experiences among various technologies, in particular for mobile devices. My mobile research projects pioneered technologies and interfaces for capturing, tagging, and sharing photographs on mobile devices, including using the earliest smartphone with a camera introduced in the United States. The Mobile Media Metadata projects (MMM and MMM2) developed context-aware mobile media technology, applications, and user interfaces that leveraged contextual metadata—spatial, temporal, and social—to infer media content and support media tagging, sharing, and reuse, including breakthrough work in context-aware mobile face and place recognition. In addition, our project collaborated closely with social science and

design research to understand how and why people use mobile media technologies. These Mobile Media Metadata Data projects were sponsored by numerous commercial leaders in mobile and media technologies, including British Telecom, Hewlett-Packard, France Telecom, Nokia, Ricoh Innovations, AT&T, Opera Software, TEKES, and the UC Discovery Grant for Digital Media. Other projects that I directed at the UC Berkeley School of Information included: Media Streams Metadata Exchange (media metadata framework for annotating, retrieving, sharing, and remixing video on the Web); Active Capture (interactive cameras that use signal processing and computer-human interaction to capture high quality, reusable, annotated media assets); and Adaptive Media (adaptive media templates and automatic editing functions to mass customize and personalize media). In my time at UC Berkeley, I also served as Co-Founder and Executive Committee Member of the interdisciplinary UC Berkeley Center for New Media, an Advisory Board Member of the Art, Technology, and Culture Colloquium, and an Affiliated Faculty Member of the Berkeley Institute of Design. In addition to supervising doctoral and master's degree students at the UC Berkeley School of Information, I taught courses in "Information Organization and Retrieval", "Multimedia Information", "Digital Media Design Studio", and "Foundations of New Media", all of which involved teaching and mentoring students in user interface design.

8. In 2005, I founded and co-directed Yahoo! Research Berkeley, a joint research laboratory in partnership between UC Berkeley and Yahoo!, which produced a number of innovative public prototypes in mobile media and social media technology and applications. The development of these prototypes included extensive exploration of user and design interfaces, mobile computing, and media technology. From 2006-2009, I transitioned to the role of Chief Scientist and Vice President of Early Stage Products (ESP) for Yahoo! Connected Life (which included Yahoo!'s mobile and interactive television divisions), and I also served as Social Media Guru at Yahoo!, including working closely with Yahoo! CEO and Co-Founder Jerry Yang. My work at Yahoo! focused in particular on creating the technology, applications, and user interfaces for mobile devices and systems including mobile search, mobile social communications applications, and mobile advertising. In addition, I was very actively involved in patenting my inventions, producing over 100 patents while at Yahoo!.

9. I then served as Chief Scientist for Invention Arts where I focused on new approaches to how people can better control, share, and benefit from their personal data as well as new methods of strategic intellectual property development. At Invention Arts, I worked with the World Economic Forum's Rethinking Personal Data project. After my time at Invention Arts, I worked as a Partner Architect for Microsoft's Online Services Division. I and my team continued to work on early-

stage products and developed technology involving personal data, privacy, social computing, and personalized search. This technology included the development of user interface (UI) and the software architecture underlying the UI. I also worked as an elite inventor at Microsoft including co-inventing with Microsoft Co-Founder and Chairman Bill Gates and current Microsoft CEO Satya Nadella resulting in numerous patents.

10. I am the inventor or coinventor on over two hundred and forty (240) granted patents, involving various computing environments, especially mobile and media systems, applications, and user interfaces. In my time at the MIT Media Laboratory, Interval Research, Amova, UC Berkeley, Yahoo!, Invention Arts, and Microsoft, I worked on innovative technologies, applications, and user interfaces for media automation, context-aware computing, computer vision, mobile computing, social and mobile media, social and mobile search, sociotechnical systems, mobile and social advertising, and personal data technologies and applications. During my time teaching and working with these entities, I was also a member of the Institute of Electrical and Electronics Engineers Computer Society (IEEE), Association for Computing Machinery (ACM), and American Association for Artificial Intelligence (AAAI).

11. My *curriculum vitae* is attached as Attachment A and includes a listing of my research publications and patents on which I am an inventor. To help gauge

the impact of my work, it is important to note that my patents and research publications have earned an h-index of 88, demonstrating significant impact, and an i10-index of 237, reflecting the wide scope of my contributions ([Google Scholar](#)).

### **III. COMPENSATION**

12. My work on this matter is being billed at my customary rate of \$400 an hour. Also, I am being reimbursed for reasonable expenses I incur in relation to my services. I have no pecuniary interest in the outcome of this proceeding. I understand I will be paid regardless of the outcome of any proceeding in which my work is used.

### **IV. LEGAL CONSIDERATION**

13. I am not an attorney. My understanding of the law is based on information provided by counsel for Smith Interface Technologies, LLC.

#### **A. Anticipation**

14. I understand that a reference anticipates a claim if it discloses each and every element recited in the claim, arranged as in the claim, so as to enable a person of ordinary skill in the art (POSITA) to make and use the claimed invention without the need for undue experimentation in light of the general knowledge available in the art. I understand that a U.S. Patent document is presumed to have sufficient description to include sufficient detail for a person of ordinary skill in the art to make and use the subject matter that document describes.

15. I also understand that a claim limitation may be present in an alleged prior art reference either expressly or inherently, but inherency may be established only if such limitation is necessarily present in the reference. I understand inherency cannot be established by probabilities or possibilities, and the mere fact that a certain thing may result from a given set of circumstances is not sufficient to establish inherency.

## **B. Claim Interpretation**

16. I understand that a claim term is interpreted according to its ordinary and customary meaning as a POSITA would have understood the term in light of the surrounding claim language, other claims, the specification, and the patent's prosecution history, which are referred to as intrinsic evidence. I also understand that prior art references cited in the patent's prosecution history are considered intrinsic evidence. I further understand that evidence outside the patent and its prosecution history (e.g., dictionaries and technical articles) may inform the context in which a POSITA would have understood the claims of a patent. I understand this ordinary and customary meaning applies absent unique circumstances, such as where a patent clearly expresses an intent to set forth a special meaning for a term.

## **C. Overview of Task & Basis for Opinions**

17. I have been asked to review U.S. Patent No. 10,725,581 (referred to as "the '581 Patent"). I have been asked to provide opinions related to certain issues

from the perspective of a person of ordinary skill, having knowledge of the relevant art, as of August 5, 2011, and—except where otherwise noted—the opinions stated in this declaration are from that perspective. The qualifications and abilities of such a person are described in paragraph 21 below.

18. More particularly, I have been informed that this proceeding is currently at a preliminary stage during which the Patent Trial and Appeal Board (the Board) will decide whether the Petition establishes a reasonable likelihood of at least one claim of the '581 Patent being invalid. At this preliminary stage, I have been asked to focus my analysis on the Petition's proposed invalidity theories for the '581 Patent's independent claims 1 and 42.

19. My opinions are based on my education, training, and experience as well as items that I reviewed to prepare my opinions, including the Petition, the documents listed in the Exhibit List included with the Petition, and any other items that I reference in my below analysis.

20. I understand that other issues may arise that require further explanation, and I will provide that explanation if appropriate. As a result, I respectfully reserve the right to update and supplement this declaration and the information and opinions provided herein.

#### **D. Level of Skill in the Relevant Art**

21. I understand that a patent must be analyzed from the perspective of a person of ordinary skill in the art (“POSITA”) as of the time of invention of the patent, which is typically considered to be the patent’s earliest filing date. While I do not necessarily agree with every aspect of Dr. Cockburn’s explanation of the level of ordinary skill in the art, I do not currently believe the aspects of that explanation I would change or clarify would impact the analysis set forth in this declaration. For purposes of this declaration, my opinions are therefore provided from the perspective of the POSITA described in paragraph 36 of Dr. Cockburn’s declaration (EX1003) as of August 5, 2011. This POSITA would have a Bachelor’s degree in computer science, computer engineering, or a comparable field and at least two years of professional experience working with graphical user interfaces and applications for computers. However, additional years of experience could substitute for the advanced-level degree. My education, technical expertise and personal knowledge discussed in Section II shows that I meet the qualifications of a POSITA.

#### **V. OVERVIEW OF THE ’581 PATENT**

22. The ’581 Patent is titled “Devices, methods and graphical user interfaces for manipulating user interface objects with visual and/or haptic feedback” and lists as its inventor Michael S. Smith. EX1001, Title. The ’581 Patent describes various user interface operations, such as those for portable electronic devices.

EX1001, 13:51-14:11 (describing “hand-held computer, mobile phone, personal digital assistant (PDA), tablet computer” and depicting “a mobile device” in FIG. 2). In operation, signals can be received in association with the touch interface (e.g., touch screen) and can correspond to a signal indicative of a touch interface being touched. EX1001, 14:31-53. The user experience can then be altered utilizing these touch signals. EX1001, 15:39-51, FIG. 3.

23. An illustration of this operation is shown in FIG. 18, where it is determined if a touch event has occurred (step 1802) and the touch event attributes are determined (step 1804). EX1001, 56:32-36. A gesture may then be identified (step 1806) from gesture inputs related to these touch event attributes (both initial and over time). EX1001, 56:37-60. The '581 Patent explains that such inputs can include the duration of a gestures because often different gestures will be indistinguishable based on initial contact. EX1001, 56:37-60 (gestures “identified after the gesture has been performed for some period of time” and providing example of distinguishing between “a two finger pinch gesture and a two finger swipe”). In some embodiments, a contact pressure is also utilized to distinguish between gestures as well as to parametrize different intensities of the same gesture. EX1001, 56:61-57:8. Once the gesture is identified, a corresponding operation can be performed (step 1808). EX1001, 57:8-10. Such operations can include the modification of one or more display attributes. EX1001, 57:35-36.

24. The '581 Patent also describes performing various operations based on a context sensitive embedded hyperlink in a web browser. EX1001, 30:44-49 (“once an appropriate [hyperlink] selection function is chosen, a selection may be defined based upon user input”). For example, a user can cause different operations to occur when selecting a hyperlink based on a parameter of a gesture (e.g., contact pressure level) being less than or greater than thresholds. EX1001, 31:39-52. (describing scenario where the contact pressure level surpasses a value of  $P_1$ , but not  $P_2$ ). One such hyperlink operation can include utilizing a hyperlink contextual menu. EX1001, 31:39-52.

**A. Independent Claims 1 and 42**

25. Independent claim 1 of the '581 Patent is directed to an “an electronic device” that has a display, a touch-sensitive interaction surface, an actuator, one or more processors, memory, and one or more programs. EX1001, 102:50-59. The programs are executed by the processor to cause various operations to be performed (via the execution of instructions within the program). EX1001, 102:50-59.

26. These operations include to (1) display, on the display and via a user interface of a network browser application, a first web page including a hyperlink that identifies a second web page; (2) detect a first contact starting at a first contact point at a first contact time on the touch-sensitive interaction surface; (3) detect an end of the first contact at a second contact time; (4) determine a duration of the first

contact as a difference between the first contact time and the second contact time; (5) determine whether there is a contact movement of the first contact between the first contact point and a second contact point; (6) and determine whether the first contact point of the first contact corresponds with a location of the hyperlink of the first web page. EX1001, 102:60-103:9. Based on the determinations and detections made during these operations, the programs will perform certain functions. In other words, the determinations and detections performed are utilized as prerequisite conditions to determine which resulting function will be executed. *See e.g.*, EX1001, 57:9-10 (“Once the gesture has been identified, the corresponding operation is performed”).

27. Specifically, the claims include:

- (1) a temporal aspect; (Claim 1 – “when:”), (Claim 42 – “based on detected usage where:”);
- (2) a number of prerequisites elements; (Claim 1 – Limitations [1.m.i]-[1.m.ii], [1.n.i]-[1.n.v], [1.o.i]-[1.o.v]); and
- (3) functions that are executed when the prerequisites elements are met. (Claim 1 – Limitations [1.m.iii], [1.n.iv], [1.o.vi]-[1.o.viii])

EX1001, 102:50-103:55; 114:53-115:53.

28. The declaration of Dr. Cockburn (EX1003) largely focuses on three of these functions, which are identified as [1.m] ([1.m.i – 1.m.iii]), [1.n] ([1.n.i –

1.n.vi]), and [1.o] ([1.o.i – 1.o.viii]). EX1001, 103:10-55; EX1003, ¶¶33-35. As recited in claim 1, the three different claimed functionalities are executed “when” the prerequisite elements are met (described as three scenarios by Dr. Cockburn). EX1001, 102:50-103:55; EX1003, ¶¶33-35. These prerequisite elements are defined in the claims, but the most relevant of the scenarios concerns the duration of the first contact in relation to a first user-configurable predefined duration and a second user-configurable predefined duration. EX1001, 103:10-55. When mapping to the prior art Dr. Cockburn refers to the first user-configurable predefined duration as “the selection threshold” and refers to the second user-configurable predefined duration as “the activation threshold.” EX1003, ¶¶59-64. The below description of the claims is intended to be a summary of the claimed operation, and any omission of elements or use of different words are for brevity and consistency with Dr. Cockburn.

29. In the first scenario (among other things), “the duration of the first contact is determined to be less than a first user-configurable predefined duration” and “the end of the first contact is detected” (Limitation [1.m.ii]). *See* EX1001, *claim 1*. When this prerequisite operation is satisfied, the programs (executed by the processor) cause the device to “avoid display, on the first web page, a result of any operation based on the first contact.” *Id.*

30. In the second scenario (among other things), “the duration of the first contact is determined to be greater than the first user-configurable predefined duration and less than a second user-configurable predefined duration” (Limitation [1.m.ii]) and “the end of the first contact is detected” (Limitation [1.m.v]). *See* EX1001, *claim 1*. When this prerequisite operation is satisfied, the programs (executed by the processor) cause the device to “replace the display of the first web page with the second web page via the user interface.” *Id.*

31. In the third scenario (among other things), “the duration of the first contact is determined to be greater than the second user-configurable predefined duration” (Limitation [1.o.ii]) and “the end of the first contact is not detected” (Limitation [1.o.v]). *See* EX1001, *claim 1*. When this prerequisite operation is satisfied, the programs (executed by the processor) cause the device to (1) “output, utilizing the actuator, a first feedback that is perceptible by touch;” (2) “display a menu including at least one option for [...] performing an operation on a web address associated with the hyperlink of the first web page;” and (3) “further display at least a portion of the second web page [...]” *Id.*

32. Claim 42 includes similar limitations to those found in claim 1. *See* EX1004, 114:53-115:53. Claim 42 includes the same three scenarios described above and perform the resulting functionalities based on the detected usage where prerequisite operation is satisfied. Thus, both claims 1 and 42 recite execution of

operations in response to the determination that various conditions are met. *See* EX1001, *claims 1 and 42*.

## **VI. OVERVIEW OF THE PRIOR ART**

33. Dr. Cockburn primarily relies on three cited references for his invalidity analysis. *See* EX1003, ¶67 (the Blumenberg-Bhumkar-Griffin combination).

### **A. U.S. Patent App. No. 2008/0259041 (“Blumenberg”)**

34. U.S. Patent App. No. 2008/0259041 is titled “Method, system, and graphical user interface for activating hyperlinks” and lists as its first inventor Chris Blumenberg. I will refer to this reference as “Blumenberg.”

35. Blumenberg discloses a portable electronic device 200 that includes a touch screen 208 which can be contacted by a user’s fingers 212 to perform certain functions on the device. EX1004, ¶[0034]. I describe two of the most relevant functions cited by Dr. Cockburn below.

#### ***1. Inadvertent Touch Functionality***

36. As depicted in Blumenberg’s FIG. 2 (inset below), Blumenberg describes the use of a keyboard 210 where “a user may select one or more of the icons, and thus, one or more of the corresponding symbols, by making contact or touching the keyboard **210**.” EX1004, ¶[0034].

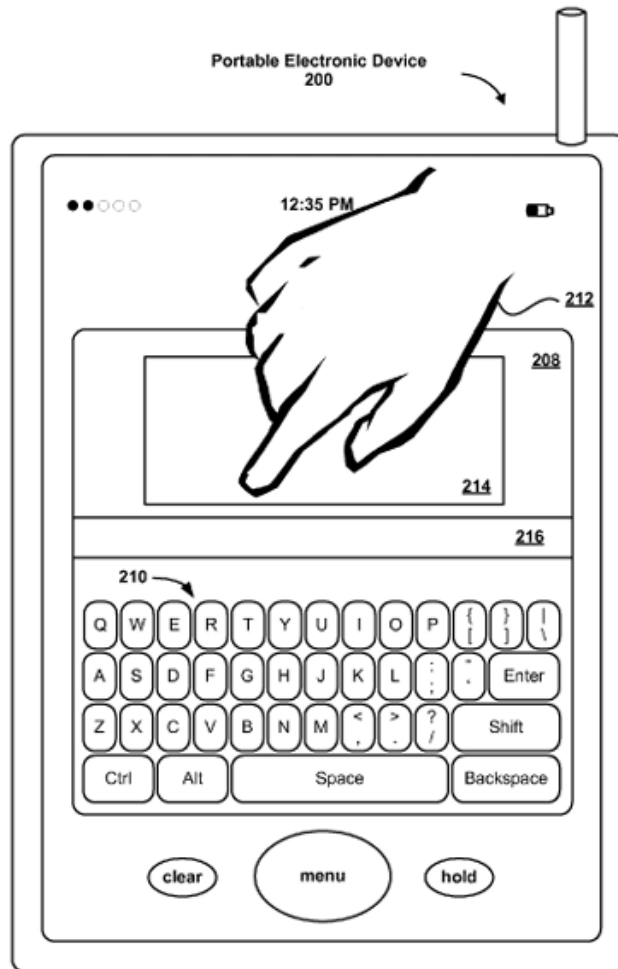


FIG. 2

As shown above, the user contacts the keyboard with their fingers 212. EX1004, ¶[0034]. Note that Blumenberg admits that the fingers depicted in FIG. 2 are “(not drawn to scale in the figure)” EX1004, ¶[0034].<sup>1</sup> This contact with the

<sup>1</sup> An average index finger length to mobile phone screen width ratio would be approximately 1:1, whereas in Blumenberg’s FIG. 2, the ratio appears to be more like 1:3. This is important to note because FIG. 2 does not accurately represent the difficulty in applying desktop user interface objects (like a menu with a series of small icons) to a mobile user interface context, where it can be difficult for a user to be able to easily and accurately press an intended small icon, virtual key, or virtual button with their finger, especially when these small icons, virtual keys, or virtual buttons are arrayed next to one another.

user's finger can correspond to a specific gesture that is associated with the selection of the icon, such as one or more taps, swipes, or a rolling of a finger. *See id.* By linking the selection of an icon with contact corresponding to a specific gesture, “inadvertent contact with an icon” can be avoided. *See id.* “For example, a swipe gesture that sweeps over an icon may not select a corresponding symbol if the gesture corresponding to selection is a tap gesture.” EX1004, ¶[0034].

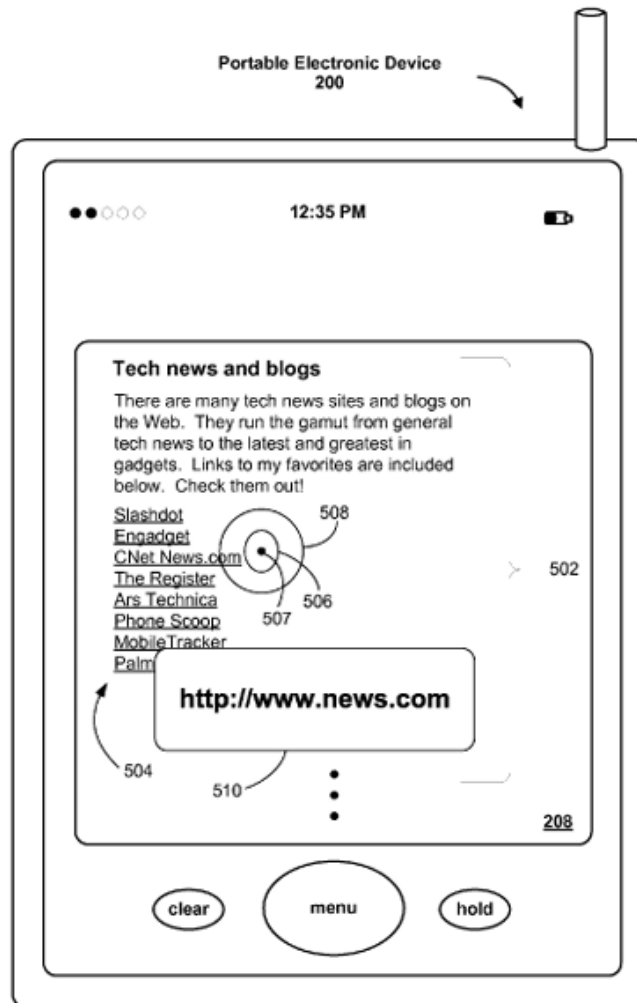
37. An illustration of this functionality can be seen by an example in which a user wishes to type “patent” on Blumenberg’s keyboard 210. In this example, the user must tap—initiate and break contact—on each icon/letter (“P” and then “A” and so forth) to spell the word “patent.” If the user does not tap the icons and, instead, attempts to swipe through the letters, Blumenberg explains that it will not select those letters. EX1004, ¶[0034]. Following the example above, if a user contacts the “P” icon and then drags their finger to the “A” icon without breaking contact, the device will consider this contact inadvertent. Therefore, the device will not register a selection on the icons (as opposed to selecting every icon between the “p” and “a” icons). *See* EX1004, ¶[0034].

## **2. *Hyperlink Preview Functionality***

38. Blumenberg also discloses a graphical user interface (“GUI”) for “activating hyperlinks on a portable electronic device.” EX1004, ¶[0002]. Blumenberg’s GUI is designed to overcome the “small screen size” of portable

devices that hinders the user's ability to get information on and navigate using hyperlinks, because in mobile user interfaces "getting information about the hyperlinks and navigating to other webpages via the hyperlinks takes on a hit-or-miss character, which can frustrate users." *Id.*, ¶[0004].

39. As depicted in FIG. 5C (inset below), Blumenberg seeks to mitigate the issue of navigating hyperlinks by introducing a hyperlink preview window (e.g., link information 510) that provides quick, easy to read information to help the user confirm correct finger contact with the selected hyperlink. *See id.*, ¶¶[0048], [0053]. As shown below, Blumenberg's link information 510 (here: "http://www.news.com") functions similarly to a pop-up window that magnifies the URL name of a particular link (here: "CNet News.com") within the set of links 504. EX1004, ¶[0048].

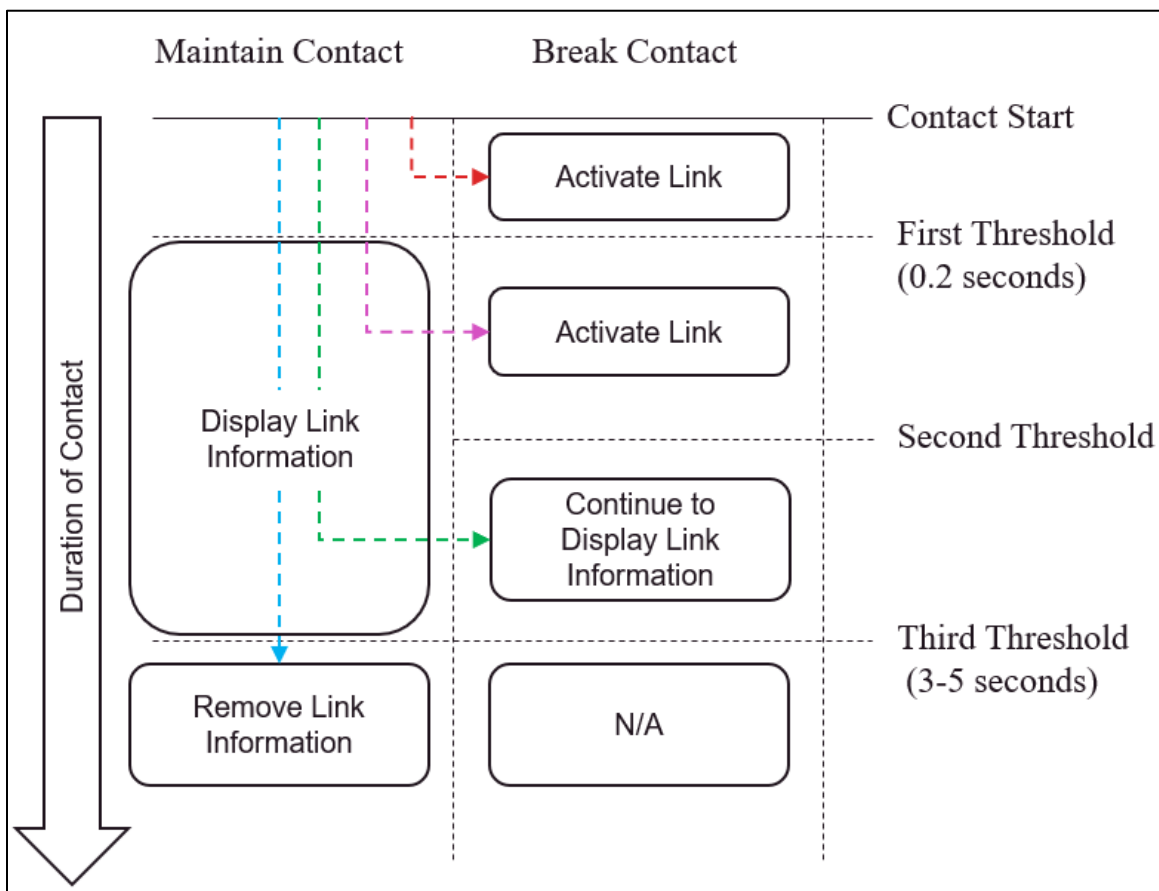


40. In Blumenberg, a user can contact the touch screen 208 (e.g., at contact area 506 and/or contact point 507) to perform operations. EX1004, ¶[0047]. One such operation is the selection of a target link within the set of links 504. *Id.* In some configurations multiple links may be displayed and the device must determine which particular link is selected. *Id.* This selection is determined based on a position or location of user's contact on the touch screen 208 (e.g., at contact area 506 and/or contact point 507). EX1004, ¶[0047]. After the location of a contact is determined, one or more criteria (e.g., distance from the contact point 507 to a link in the set of

links 504) can be used to select a link that is most likely to correspond to the user's target link. *Id.* Once the target link is determined, the link can be activated such that “the device navigates to the page to which the determined link points and the contents of the linked page are displayed.” EX1004, ¶¶[0044], [0050]; *see id.*, FIG. 4 (step 410).

41. In addition to activating the target link based on the initial contact, as described in paragraphs [0042]-[0044] of Blumenberg, there are other scenarios in which the user can maintain their contact to perform other functions. These functions include displaying link information 510 that is associated with the target link in the hyperlink preview window. EX1004, ¶[0049]. For example, Blumenberg states that this link information 510 “is displayed after the contact [on the touchscreen] is maintained for at least a predetermined time (e.g., 0.2 seconds, or another value between 0.1 and 0.25 seconds).” *Id.* In another example, if the contact continues to be maintained (e.g., three to five seconds), “the information **510** may be removed.” *Id.* Blumenberg also discloses performing certain operations after contact is broken (i.e., when the user removes their finger from the touchscreen), where the operations are based on the amount of time the contact was maintained before the contact break. *See* EX1004, ¶¶[0049]-[0051]. These operations and scenarios can be seen in the below flow chart. Specifically, Blumenberg discloses

four different operations based on the time that the contact is maintained and when the contact is broken. *See* EX1003, ¶¶59-64 (identifying four scenarios)



42. These scenarios are described in paragraphs [0049]-[0051] of Blumenberg. Each scenario starts with a contact being detected on the touchscreen at or near a link within a set of links 504. *See* EX1004, ¶¶[0049]-[0051].

43. In the first scenario (red line in above flowchart), the contact is not maintained for the “predetermined time” (e.g., 0.2 seconds) as described in Blumenberg’s paragraph [0049] (referenced as “the selection threshold” (EX1003, ¶60)). Paragraph [0049] of Blumenberg does not disclose what occurs if the contact

is broken before the selection threshold and only describes that the link information “is displayed after the contact is maintained for at least a predetermined time.”

44. Dr. Cockburn contends that Blumenberg’s device “registers no selection and triggers no change on the display” in the first scenario. EX1003, ¶60. However, Dr. Cockburn’s conclusion is not described in either of the paragraphs of Blumenberg that are cited to support his conclusion ((Blumenberg), [0034], [0049]). Paragraph [0034] describes the inadvertent touch functionality of Blumenberg’s keyboard (see my Section VI.A.1 above) and paragraph [0049] of Blumenberg does not disclose what occurs in this scenario. Thus, Dr. Cockburn’s conclusion about the first scenario is absent from Blumenberg’s disclosure.

45. Further, a POSITA would have understood that breaking of contact before the 0.2 second threshold would likely result in the activation of the link. For example, in the paragraph directly following Blumenberg’s discussion of the “selection threshold,” Blumenberg describes that the contact may result in the link being activated. EX1004, ¶[0050]. “That is, the device **200** navigates to the page **511** to which the determined link points (FIG. 5D).” EX1004, ¶[0050]. Blumenberg continues that the “activation of the link may be triggered in a variety of ways” including “by breaking the contact.” EX1004, ¶[0051]. Blumenberg specifies that link activation can be triggered when the breaking of contact occurs “before or after” a predetermined amount of time has elapsed. EX1004, ¶[0051]. Thus, Blumenberg

explicitly contemplates a scenario in which the link is activated by the breaking of contact before a predetermined amount of time (e.g., selection threshold) has elapsed. This is also consistent with the other disclosures in Blumenberg where the link is activated without displaying the link information 510 or launching the hyperlink preview functionality. For example, FIG. 4 and paragraphs [0043]-[0044] of Blumenberg (EX1004) disclose an operation where the link is activated without display of the link information. Additionally, each of the independent claims recites activating a link without displaying the link information 510 or launching the hyperlink preview. *See* EX1004, *Claims 1, 2, 18*.

46. In the second scenario ([purple line in above flowchart](#)), contact is held past the first threshold, which results in link information 510 being displayed, and the contact is broken off shortly after the link information is displayed. *See* EX1004, ¶[0051]. In other words, contact is held past the initial “selection threshold” but is broken off before an “activation threshold.” EX1003, ¶¶61-62. This scenario also results in the activation of the selected link. *Id.* This scenario enables the user to confirm that the contact on the touchscreen corresponds to the desired link the user wishes to visit, which mitigates the hit and miss character of navigating crowded links. *See id*; *see* EX1004, ¶[0004], FIG. 5C. Thus, instead of just taping the link (as in the first scenario), the user can maintain the contact for a bit longer to confirm

that the selected link is the link that the user wishes to visit. *see* EX1004, ¶¶[0048]-[0051].

47. In the third scenario ([green line in above flowchart](#)), the contact is held for a longer period after the link information 510 is displayed before the contact is broken off. *See* EX1004, ¶[0051]. In other words, contact is held past the “activation threshold” and then broken off. *See* EX1003, ¶63. This scenario does not result in the activation of the selected link and, instead, the link information 510 continues to be displayed after the contact is broken. EX1004, ¶[0051]. The user may then click on link information 510 to visit the hyperlink associated with the link information. EX1004, ¶[0051] (“user must break contact and tap the link information (which is continued to be displayed after the contact break) to activate the selected link.”).

48. In the fourth scenario ([blue line in above flowchart](#)), the contact continues to be maintained in the same position and the link information 510 is removed. *See* EX1004, ¶[0049]. In other words, contact is held past the “activation threshold” and the contact is **not** broken off. *See* EX1003, ¶64. In this scenario, the display goes back the configuration before the link information was displayed (e.g., FIG. 5B). EX1004, ¶[0049] (“the information **510** may be removed after a predetermined amount of time (e.g., three to five seconds) if the contact area **506** is maintained in the position”).

**B. U.S. Patent App. No. 2008/0235594 (“Bhumkar”)**

49. U.S. Pat. Pub. No. 2008/0235594 is titled “Methods and systems for enhancing internet experiences” and lists as its first inventor Soujanya Bhumkar. I will refer to this reference as “Bhumkar.”

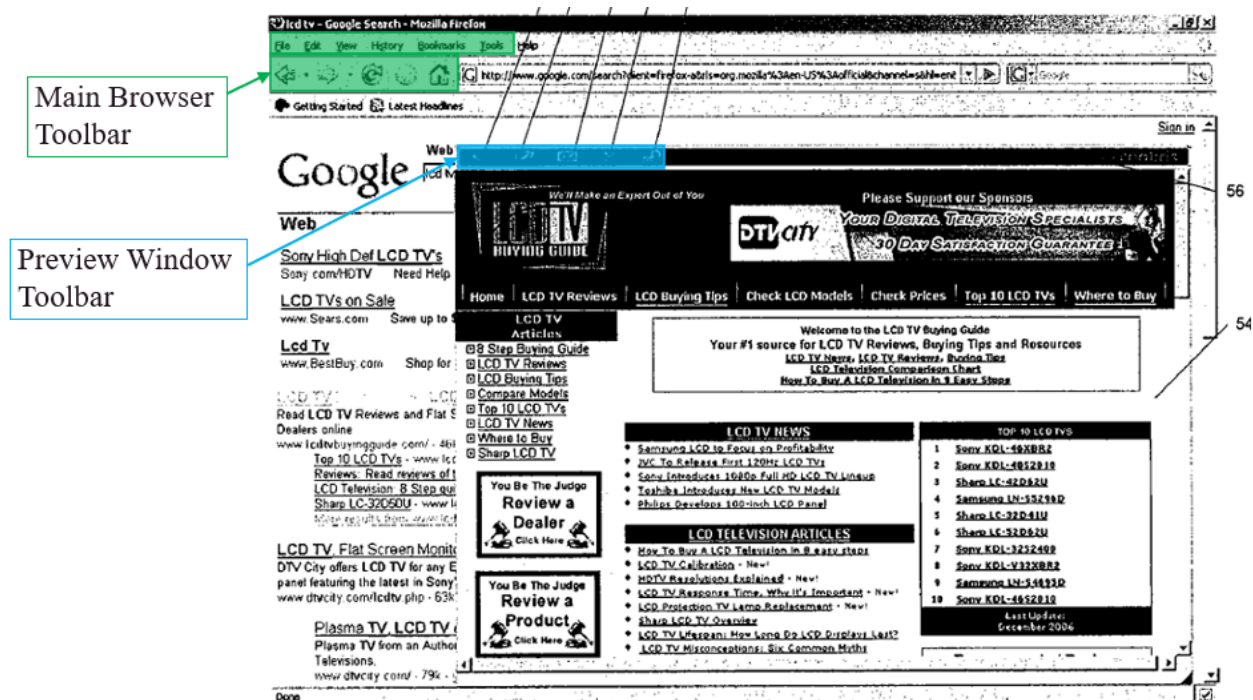
50. Bhumkar discloses systems and methods for enhancing internet experiences on desktop computers by displaying “[p]reviews of a target web site or other Internet-accessible resource [...] in response to cursor control events.” EX1005, Abstract. Bhumkar explains that when a user is viewing a list of hyperlinks “it is often difficult for the searcher to differentiate between relevant and irrelevant results because of the limited information returned by the search engine.” EX1005, ¶[0005]. “For example, such results pages often provide only a list of hyperlinks to the target web pages” and “a few lines of text clipped from the target web page will be presented along with the associated hyperlink.” *Id.* However, Bhumkar explains that this “text is usually limited to a few words which may or may not help the searcher in assessing the relevancy of the returned result.” *Id.* Because this text “provides the searcher with little or no information” to determine relevance of the link, the user must “click through to the target web page associated with the link” to determine whether the link is relevant. EX1004, ¶[0006].

51. Bhumkar seeks to solve this limited information problem by providing “a ‘quick view’ or ‘preview’ of a target web site.” EX1005, ¶[0038]. The quick

view can include a static webpage (e.g., image). EX1005, ¶[0041]. In addition to a “quick view” static image of a webpage, Bhumkar offers the option of a “preview window” of a webpage. Unlike the “quick view”, Bhumkar’s “preview window” includes a fully functional webpage. EX1005, ¶[0071]. In these functional embodiments, the preview window that is displayed “is a fully functioning web page, not merely an image of such a page” and “full navigation is now permitted within [the] preview window” *Id.*, ¶¶[0070]-[0071]. In the embodiments having a fully functional webpage, the preview window “may have associated toolbars that include functions permitting various manipulations of the content displayed in the preview window.” *Id.*, Abstract, ¶[0040] (window “may offer or permit any conventional browser functionality” so the user can navigate the functional webpage). This toolbar is not included in embodiments with non-functional windows, such as the quick view. *Compare* FIGs. 2 and 4 *with* FIG. 5; *see* EX1005, ¶¶ [0049]-[0050] (FIG. 2 illustrates a “quick view” (item 20) of “an image of the actual web page” without a toolbar); EX1005, ¶[0071] (FIG. 5 illustrates a “preview window” (item 54) of “a fully functioning web page” with a toolbar). Thus, Bhumkar provides a secondary, preview window in a desktop web browser that enables the user to fully navigate a website in the preview window.

52. Because the preview window displays a fully functioning web page (as opposed to just snippets of text), the preview window “may offer or permit any

conventional browser functionality” so the user can browse the webpage in the same manner as is done in the main window. See EX1005, ¶[0040]. Bhumkar provides examples of this “conventional browser functionality, such as Back, Jump to, Close, Share, Lock, RSS, WAP, Sidekick, Stumble, Full Screen, etc., in order to further facilitate solutions to the aforementioned problems” *Id.* Thus, all of the functionality of the main desktop browser window can also be implemented in the preview window. EX1005, ¶[0066] (“Because the quick view relies on the use of a hidden frame within the browser, all of the functionality available to the browser is available to the quick view process.”). This is illustrated in the annotated version of Bhumkar’s FIG. 5 (inset below), where the main browser window and the preview window both include toolbars.



A POSITA would understand that at least some of the functionality from the preview window toolbar is available in the main browser toolbar window (e.g., back icon, full-screen icon, close icon, etc.). EX1005, ¶¶[0040]-[0042], FIG. 5.

**C. U.S. Patent App. No. 2011/0248948 (“Griffin”)**

53. U.S. Pat. Pub. No. 2011/0248948 is titled “Touch-sensitive device and method of control” and lists as its first inventor Jason Tyler Griffin. I will refer to this reference as “Griffin.”

54. Griffin discloses “an apparatus for and method of modifying a touch threshold” that may be used to “trigger performance of functions, such as provision of tactile feedback.” EX1006, ¶[0014]. Griffin’s FIG. 7 (inset below) provides an illustration of “a method of modifying a touch threshold.” *Id.* ¶[0039].

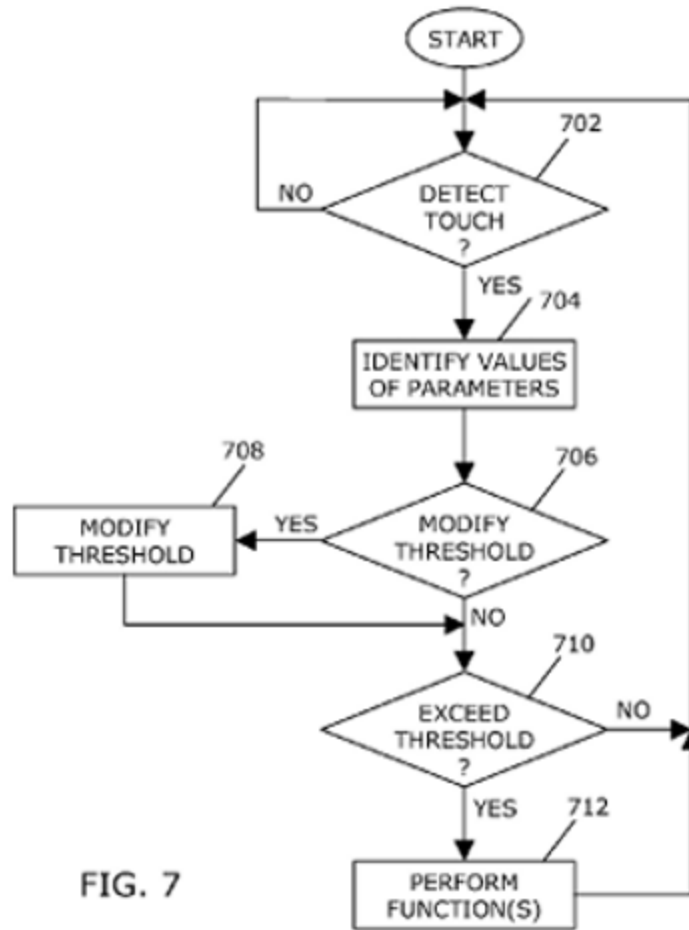


FIG. 7

55. In this method, a touch is detected at step 702 and parameters associated with the touch are identified at step 704. EX1006, ¶[0040]. A determination is then made as to whether to modify a touch threshold at step 706. *Id.*, ¶[0041]. The parameters associated with the touch can then be compared to the original threshold or the modified threshold. *Id.*, ¶[0053]. If the parameters associated with the touch do not exceed the touch threshold, the process continues at 702; on the other hand, if the parameters do exceed the touch threshold, then one or more functions are performed at step 712.

56. The decision of whether to modify one or more touch threshold (at 706) can utilize various parameters or characteristics of the touch, such as contact area, touch rate, touch location, and touch force as well as parameters from other sensors (e.g., accelerometer) or the user. EX1006, ¶[0041].

57. Griffin provides one example of modifying a touch threshold when a large “number of instances of inadvertent touches occurs during a period of time” such as when the device is “being carried in a pocket or bag.” *Id.*, ¶[0043]. In such a scenario, “the force threshold aspect of the touch threshold may be increased for a fixed period of time or until the inadvertent touches are not detected.” *Id.* In this way, a greater force is required to perform functions so that the inadvertent touches do not activate any unintended functions. For example, this is described as being used to prevent the common practice of inadvertently calling someone on a mobile phone in one’s pocket (i.e., pocket-dial). *See id.*, ¶[0061] (“reduces the occurrence of inadvertent touches causing functions to be performed, such as [...] calling a contact”).

**VII. GROUND 1: THE PETITION FAILS TO SHOW THE BLUMENBERG-BHUMKAR-GRIFFIN COMBINATION TEACHES THE ELEMENTS OF CLAIMS 1 AND 42**

58. Dr. Cockburn’s analysis of claims 1 and 42 is identical. EX1003, ¶181 (incorporating discussion from claim 1 into analysis of claim 42). Therefore, while

I only explicitly address the deficiencies of Dr. Cockburn's analysis of claim 1, these deficiencies must also apply to claim 42.

**A. [1.m.iii] – avoid display, on the first web page, a result of any operation based on the first contact**

59. Claim Limitation [1m] includes two prerequisite elements [1m.i] and [1m.ii] and one resulting function element [1m.iii]. EX1001, 103:10-17. Specifically, Limitation [1m] recites:

when: *[i]* the first web page is displayed via the user interface of the network browser application, *[ii]* the duration of the first contact is determined to be less than a first user-configurable predefined duration, and the end of the first contact is detected:

*[iii]* avoid display, on the first web page, a result of any operation based on the first contact;

60. As claimed, “when” the prerequisite elements are met, the resulting function element is executed. EX1001, 103:10-17. Thus, the program includes instructions such that “when” the conditions that “the first web page is displayed via the user interface of the network browser application” ([1m.i]) and “the duration of the first contact is determined to be less than a first user-configurable predefined duration, and the end of the first contact is detected” ([1m.ii]) are satisfied, the programming instructions cause the device to “avoid display, on the first web page, a

result of any operation based on the first contact” ([1m.iii]). *Id.* Claim 42 includes similar features ([42.h]). EX1001, 115:7-13.

***1. Dr. Cockburn’s Theory is Absent From and Contradicted by Blumenberg***

61. Dr. Cockburn contends that Blumenberg’s first scenario discloses this claimed feature. EX1003, ¶¶118-119, 121, 123. Specifically, Dr. Cockburn alleges that “Blumenberg teaches and/or suggests that inadvertent contact at a point that corresponds with the location of the hyperlink will not select or activate the hyperlink.” EX1003, ¶118. As explained in my paragraphs 42-44 above, this theory is absent from Blumenberg and inconsistent with Blumenberg’s other teachings that activate hyperlinks upon contact and without displaying the link information.

62. Dr. Cockburn attempts to mix the disclosures of Blumenberg’s paragraph [0034] and [0049] to arrive at the proposed operation. EX1003, ¶¶118-119. Specifically, Dr. Cockburn contends that “Blumenberg’s statement about disregarding inadvertent contact with icons as a general matter would certainly apply to Blumenberg’s preferred embodiments about hyperlinks.” EX1003, ¶118. But even if a POSITA were to apply the inadvertent contact functionality to hyperlinks, it would not arrive at the claimed elements. Paragraph [0034] of Blumenberg explains that inadvertent contact is disregarded by requiring a specific gesture to select an icon, such that “a swipe gesture that sweeps over an icon may not select a corresponding symbol if the gesture corresponding to selection is a tap gesture.”

EX1004, ¶[0034]. That is, Blumenberg teaches not selecting tap-enabled icons when a swipe gesture occurs over the icon. *Id.* Implementing this functionality into Blumenberg’s embodiments about hyperlinks (as Dr. Cockburn contends) would result in the same functionality. That is, Blumenberg would not select the tap-enabled hyperlink when a swipe gesture occurs over that hyperlink. There is no evidence or reasoning provided by Dr. Cockburn that explains that a tap—initiate and break contact—on the hyperlink that is less than 0.2 seconds would not open that hyperlink. *See* EX1003, ¶118. And Dr. Cockburn’s proposed differentiation in the *duration* of contact is independent from and unrelated to the *movement* of contact as is taught by Blumenberg.

63. In industry practice, a normal tap gesture would be completed before the 0.2 second threshold and this contact would not be considered “an exceedingly short duration” as framed by Dr. Cockburn. *See* EX1003, ¶119. For example, Hammer.JS (an open-source Javascript library for touch gestures) states: “[...] if it is touchstart + touchend and less than 100ms passed between two events then it looks like a tap.” EX2005, 1/2.<sup>2</sup> The suggested 100 millisecond upper bound threshold for a tap gesture is below the range of 0.1 to 0.25 seconds for the selection

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<sup>2</sup> Although the date of availability for EX2005 is October 1, 2020, the industry understanding for the duration of a tap gesture did not materially change from 2011 to 2020. Thus, although EX2005 is not at the relevant time of the invention (August 5, 2011), a duration of a tap gesture in 2011 would be expected to be the same or, at the very least, similar to the duration of a tap gesture in 2020.

threshold in Blumenberg. EX1004, ¶[0049]. This is also supported by the disclosure of Blumenberg which requires that the contact be “maintained for at least a predetermined time” to reach the 0.2 second threshold. EX1004, ¶[0049]. The language that the contact must be “maintained” suggests this threshold is associated with a gesture that is more than just a tap, such as a tap and hold (aka a “long press”) gesture.

64. Dr. Cockburn also contends that a POSITA would arrive at the purported operation “by applying basic common sense and reasoning” to Blumenberg’s teachings. I disagree. As explained in my paragraphs 42-44 above, Blumenberg explicitly discloses embodiment in which the link is activated by a contact without first displaying the link information. Thus, the operation of activating the link even when the contact is less than the selection threshold is consistent with Blumenberg’s embodiments. Further, Dr. Cockburn’s concludes that “Whether a hyperlink, button, or slider, the POSITA would have appreciated the general aim of Blumenberg’s design is to prevent any/all of those types of GUI elements from being mistakenly selected by inadvertent contact.” EX1003, ¶118. However, this “general aim” is not described in Blumenberg and fails to address the particulars of the specific design choices required in a UI as they apply to different kinds of UI objects and gestures. Dr. Cockburn’s overgeneralized conclusion is inconsistent with the understandings and workings of a POSITA. The challenges of

UI design and implementation are often *how* a POSITA can achieve a “general aim” and these specific solutions are what a POSITA needs to understand, not just the “general aim” itself.

65. Moreover, the alleged operation would result in operations that would be detrimental to the user’s experience. In Dr. Cockburn’s theory, the hyperlink cannot be opened until a contact on the touchscreen exceeds the predetermined time (e.g., 0.2 seconds) at which point the information 510 will be displayed. *See* EX1003, ¶¶60-62. In other words, a user cannot open the hyperlink except by holding the link until the information 510 is displayed in Petitioner’s theory.

66. This restrictive operation is explicitly contradicted by Blumenberg, which allows for activating links without having to first display the link information. *See* EX1004, FIG. 4 (depicting operation where link is activated without displaying link information); ¶[0044] (discussing activating the link in the context of FIG. 4), ¶[0051] (stating activation of the link can be triggered “before” a predetermined amount of time has elapsed). This operation is also impractical in other common browsing scenarios, such as when viewing documents or pages where the links are isolated or separated and the ability to tap on and thus open hyperlinks is expected and essential to ease of use.

67. For example, it would have been understood that not all webpages or documents include links that are clustered together, as the links may be clearly

separated or only a single link may be displayed. One example of this can be seen in the annotated FIG. 5A of Blumenberg (inset below with the intervening links in the set of links 504 removed), where the top or bottom links (circled in red) are separated such that there would be no risk of inadvertently selecting the wrong link. Compare with EX1004, FIG. 5B.

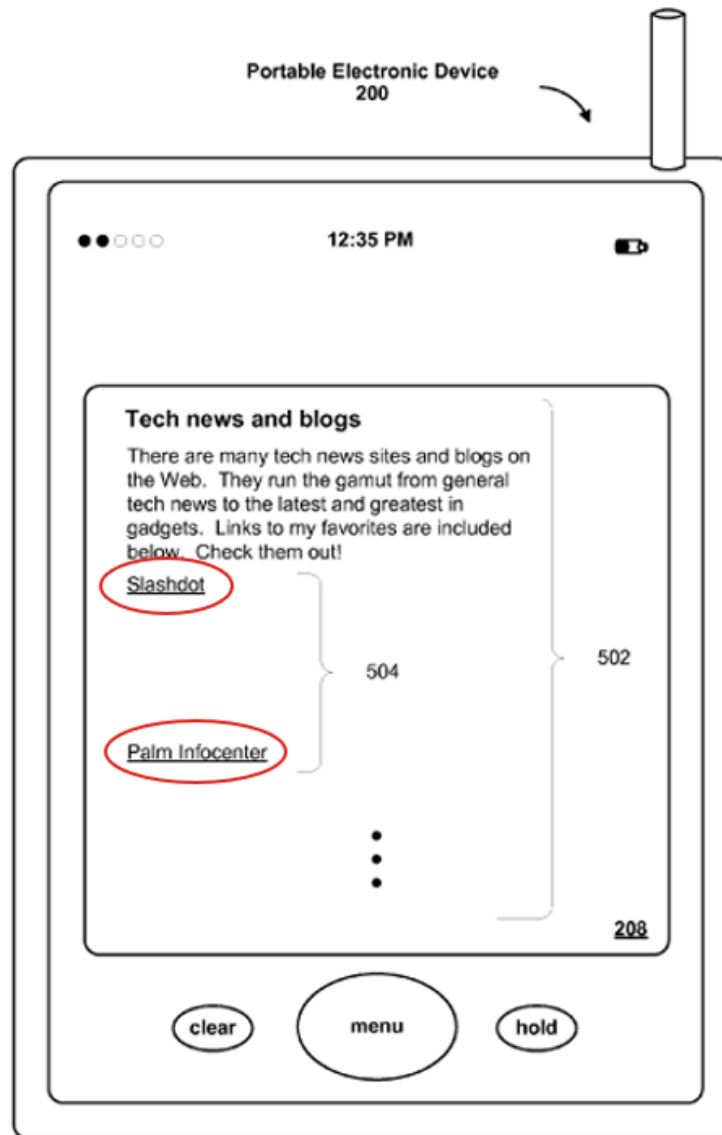


FIG. 5A

However, under Dr. Cockburn’s theory the user would not be able to simply tap the top or bottom links to activate the hyperlink. Instead, the user must go through the process of displaying the hyperlink preview window to visit the website even in scenarios where there are no neighboring links to misclick.

68. This superfluous and overly rigid operation is antithetical to Blumenberg’s objective to provide “more efficient ways to [...] select hyperlinks in portable devices.” EX1004, ¶[0005]. A POSITA, realizing Blumenberg’s objective, would understand the long press functionality to display information 510 does not replace all selection functionality for hyperlinks, but provides an *additional* option for accurately selecting links when they are too small or too close together. This example shows why the specific objects and actions of UI design solutions matter, and that a POSITA would not just focus on a “general aim” as Dr. Cockburn alleges. See EX1003, ¶118.

## **2. Griffin Fails to Cure the Deficiencies of Blumenberg**

69. Dr. Cockburn does not propose to modify Blumenberg’s “first scenario” operation based on Griffin other than to make the thresholds user-configurable. See EX1003, ¶¶116-121 (Consistent with and confirming Blumenberg’s disclosure); EX1003, ¶122 (“the combination includes Griffin’s teaching of the menial implementation detail that the *predefined* touch *duration* thresholds are *user-configurable*”). Specifically, Dr. Cockburn does not incorporate

a modification based on Griffin's inadvertent touch functionality as discussed for Limitation [1.m.ii]-[1.m.iii]. *See* EX1003, ¶¶83-96 (describing the modifications based on Griffin's teaching and failing to reference any inadvertent touch functionality).

70. Nevertheless, a POSITA viewing Griffin's inadvertent touch disclosure would not modify Blumenberg to operate as Dr. Cockburn proposes. Dr. Cockburn cites to paragraphs [0033] and [0043] of Griffin when describing the inadvertent touch functionality. EX1003, ¶120. In these paragraphs, Griffin describes reducing inadvertent input in the context of when the device "is carried in a pocket or bag." EX1006 (Griffin), ¶¶[0033], [0043]. Griffin explains that, "When the number of instances of inadvertent touches occurs during a period of time, the portable electronic device **100** is likely being carried in a pocket or bag, and the force threshold aspect of the touch threshold may be increased for a fixed period of time or until the inadvertent touches are not detected for a period of time." EX1006, ¶[0043]; *see also* EX1006, ¶[0033] ("Baseline thresholds may be established, for example, to reduce inadvertent input, e.g., selections resulting when the portable electronic device **100** is carried in a pocket or bag"). Thus, after a large number of inadvertent touches occur, Griffin determines the device is likely being carried in a pocket or bag and increases the force required to make a selection—preventing activation of unintended functions (e.g., pocket-dial).

71. It is unclear how this disclosure would lead a POSITA to modify Blumenberg so that a single tap on the hyperlink would not activate that link. Further, it is not clear why the POSITA would be motivated to make such a modification such that certain operations of Blumenberg (like that shown in FIG. 4) are unavailable. The tap on Blumenberg's hyperlink does not include a large number of inadvertent touches that necessitates modification. And, although Griffin states that a touch may be considered inadvertent based on the "duration of touch," this does not support Dr. Cockburn's proposed operation. EX1006, ¶[0043].

72. The discussion of the duration of touch being used to identify inadvertent touching is immediately preceded by the example of when the device is being carried in a pocket. *Id.* A POSITA would understand this duration of touch could encompass two scenarios: one, already mentioned, in which a sequence of several taps occurs in which each individual touch contact in the sequence is detected as a tap because each individual touch duration is **below** a certain duration of touch threshold EX1006 (Griffin), ¶[0033], [0043]; and a second scenario in which a user's single touch contact is **above** a different duration of touch threshold and touch functionality may "be suspended until inadvertent touches are no longer detected." EX1006, ¶[0043]. This suspension of touch entry based on a single touch contact is only appropriate where the touch exceeds a long duration (i.e., a tap would be no longer detected immediately after the gesture is completed and there would be no

opportunity to suspend touch entry). Similarly, a single tap provides no indication the device is being carried in a pocket and only a very long hold would provide such an indication (i.e., the user's hand is in their pocket for a prolonged period and contacting the touchscreen). It is not logical to interpret Griffin's disclosure as teaching to ignore a single tap on the device. Similarly, a POSITA would not have relied on this illogical reading of Griffin to modify Blumenberg to eliminate certain operations explicitly described in Blumenberg.

**B. [1.o]**

73. Claim Limitation [1.o] includes five prerequisite elements [1.o.i]–[1.o.v] and three resulting function elements [1.o.vi]–[1.o.viii]. EX1001, 103:32–55. Specifically, Limitation [1m] recites:

when: *[i]* the first web page is displayed via the user interface of the network browser application, *[ii]* the duration of the first contact is determined to be greater than the second user-configurable predefined duration, *[iii]* the first contact point of the first contact is determined to correspond with the location of the hyperlink of the first web page, *[iv]* it is not determined that there is the contact movement of the first contact between the first contact point and the second contact point, and *[v]* the end of the first contact is not detected:

*[vi]* output, utilizing the actuator, a first feedback that is perceptible by touch and

*[vii]* display a menu including at least one option for, in response to detection of a selection thereof, performing an operation on a web address associated with the hyperlink of the first web page, and

*[viii]* further display at least a portion of the second web page, such that at least the at least portion of the second web page is displayed in at least one first virtual display layer which appears above at least one second virtual display layer that includes at least a portion of the user interface of the network browser application that remains at least partially visible.

74. As claimed, “when” the prerequisite elements are met, the resulting function element is executed. *Id.* As discussed in my Section V.A, the most relevant prerequisite elements associated with Limitation [1.o] are that “the duration of the first contact is determined to be ***greater than*** the second user-configurable predefined duration” (Limitation [1.o.ii]) and “the end of the first contact is ***not detected***” (Limitation [1.o.v]). For brevity, I will refer to these as the “activation threshold prerequisite” ([1.o.ii]) and the “contact prerequisite” ([1.o.v]), respectively. Thus, the program includes instructions such that “when” the

conditions of the activation threshold prerequisite and contact prerequisite are satisfied, the programming instructions cause the device to:

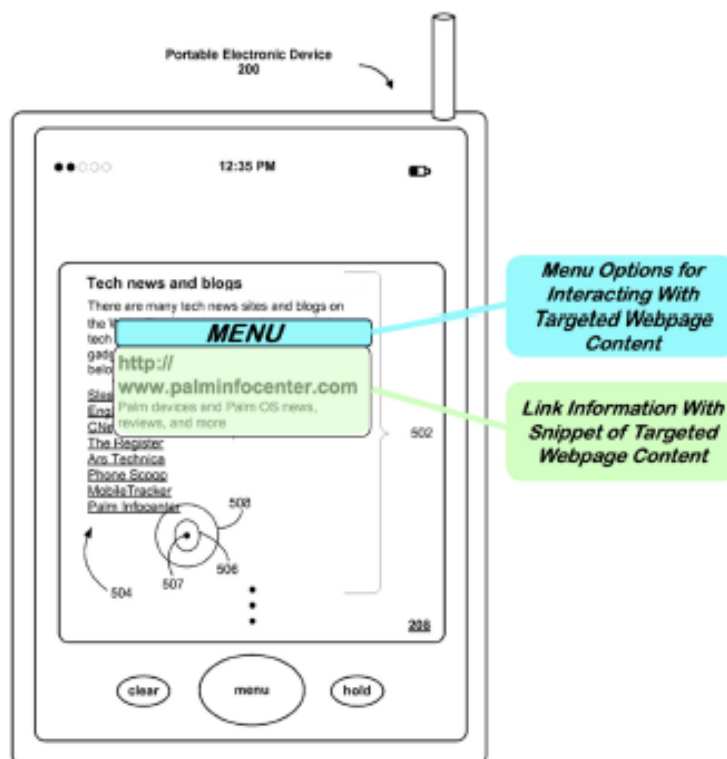
[vii] display a menu including at least one option for, in response to detection of a selection thereof, performing an operation on a web address associated with the hyperlink of the first web page, and

[viii] further display at least a portion of the second web page, such that at least the at least portion of the second web page is displayed in at least one first virtual display layer which appears above at least one second virtual display layer that includes at least a portion of the user interface of the network browser application that remains at least partially visible.

EX1001, 103:32-55.

***1. Dr. Cockburn's Combinations and Claim Interpretations***

75. To arrive at the elements of Limitation [1.o], Dr. Cockburn relies on the combination of Blumenberg and Bhumkar. *See* EX1003, ¶¶68-70, 146. Dr. Cockburn's proposed modification can be seen in the modified version of Blumenberg's FIG. 5F (inset below), in which an accompanying menu (blue) is displayed next to Blumenberg's link information 510 (green). EX1003, ¶¶69-70.



76. Dr. Cockburn contends the depicted blue menu corresponds to the claimed menu as in Limitation [1.o.vii] and the link information 510 corresponds to the claimed portion of the second web page as in Limitation [1.o.viii]. EX1003, ¶¶149, 151. Dr. Cockburn provides two alternatives for his combination to satisfy different conditional relationships. See EX1003, ¶¶157-158. (“a basic when-then conditional relationship,” “a causal conditional relationship,” and “an exclusive causal/conditional relationship”).

77. In Dr. Cockburn’s Initial Modification, the menu is a toolbar that is displayed simultaneously with Blumenberg’s link information 510 after the contact exceeds the “selection threshold” (e.g., 0.2 seconds) described in paragraph [0049].

See EX1003, ¶69, (combination displays “link information” and further displays a menu of options), ¶127 (“the contact *duration* is *greater than* the selection threshold (*first user-configurable predefined duration*), the link is selected and information associated with the link is displayed”). As explained in Dr. Cockburn’s paragraph 146 the “combination incorporates Bhumkar’s teaching to *display* a *menu* of *options*” which are displayed on a “toolbar” menu. Bhumkar discloses a toolbar that is integrated with its preview window and displayed simultaneously with its preview window. EX1005, ¶[0071] (“preview window 54 includes a toolbar 56”), FIG. 5 (depicting launched preview window with integrated toolbar 56). Thus, this combination would include a toolbar integrated with Blumenberg’s link information 510 and this toolbar would be displayed at the same time the link information is displayed—when the contact exceeds the first “selection threshold” (e.g., 0.2 seconds).

78. Dr. Cockburn also discloses an Alternative Modification in which Bhumkar’s menu options are introduced “after (and as a result of) the duration of the user’s touch contact surpasses the activation threshold (*second user-configurable predefined duration*, per Element [1.o.ii]).” EX1003, ¶147. Similarly, “while Blumenberg’s link information (*portion of the second webpage*) is initially displayed before the activation threshold, it would be paired with tactile *feedback* and a *menu* only after and as a consequence of the activation threshold.” EX1003,

¶158. Thus, in this Alternative Modification both Blumenberg’s link information and the incorporated toolbar from Bhumkar are displayed at the same time—when the contact exceeds the second “activation threshold.”

79. In Dr. Cockburn’s analysis of Limitation [1.o], he differentiates between “a basic when-then conditional relationship,” “a causal conditional relationship,” (e.g., “in response to”) and “an exclusive causal/conditional relationship” (e.g., “only when”) EX1003, ¶¶147, 157-158. Dr. Cockburn does not explain the difference between “a basic when-then conditional relationship” and “a causal conditional relationship.” Further, a POSITA would not distinguish the claimed language and “typical causal language (such as ‘in response to’)” as Dr. Cockburn alleges. EX1003, ¶157 n.8. Claim 1 recites a device comprising “one or more programs, [...] configured to be executed by the one or more processors, the one or more programs including instructions to:” execute certain functions “when” specific prerequisite elements are met. EX1001, 102:50-103:55. There is no apparent difference between a program that executes a function “when” a condition is met vs. “in response to” the condition being met.<sup>3</sup>

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<sup>3</sup> This is also true for the language used in claim 42 (“based on the detected usage where”)

80. Because Dr. Cockburn does not explain why he believes there is a distinction between “a basic when-then conditional relationship” and “a causal conditional relationship,” I am unable to address this distinction. Nevertheless, to the extent Dr. Cockburn is intending to allege that the use of “when” would be understood to be “simultaneously with” and not “in response to,” this is incorrect. Although, the actions might appear to be happening “simultaneously” from a user’s perspective, a POSITA would have understood that executing steps in a program takes time and that the program functions actually happen after (e.g., as soon as possible after) the prerequisite elements are satisfied, rather than occurring simultaneously with the satisfaction of the prerequisite elements. And, to the extent that Dr. Cockburn is attempting to distinguish between temporal succession and causal succession in the program construction, I do not believe this distinction is relevant to the coverage of claim 1. That is, the “when” language in claim 1 would cover both program constructions with either a temporal succession or a causal succession.

81. The “exclusive causal/conditional relationship” proposed by Dr. Cockburn is inconsistent with the claims as it adds unnecessary limitations that are plainly absent from the claims. Under this interpretation the resulting function elements [1.o.vi]-[1.o.viii] “only occurs in conjunction with the complete set of limitations at Elements [1.o.i]-[1.o.v].” EX1003, ¶158. However, this inclusion of

“only” is unnecessary. For example, with respect to Limitation [1.n.vi], the claims require the program to “replace the display of the first web page with the second web page” “when” the prerequisite conditions [1.n.i]-[1.n.v] are met. But this functionality (replacing the display with a different webpage) is not claimed so that it is performed “only when” the prerequisite conditions [1.n.i]-[1.n.v] are met. In fact, a device could be programmed to perform this resulting functionality in other scenarios (e.g., entering a different URL in the address bar) and would still meet the claims as long as this functionality is also performed “when” the prerequisite conditions [1.n.i]-[1.n.v] are met.

82. Regardless of the conditional relationships proposed by Dr. Cockburn, a plain reading of the Limitation [1.o] includes a program that executes three resulting function elements [1.o.vi]-[1.o.viii] when the prerequisite elements [1.o.i]-[1.o.v] are satisfied. *See* Section V.A. The same is true for the corresponding limitation in claim 42.

**2. *Dr. Cockburn’s Initial Modification Does Not Disclose the Claimed Limitations ([1.o.vii]-[1.o.viii])***

83. Dr. Cockburn’s Initial Modification does not meet claim Limitation [1.o] as is tacitly conceded by the Petitioner. *See* Pet., 46 n.7.

84. As explained in my paragraph 77, the Initial Modification requires that the toolbar and link information are displayed “after the contact is maintained for at least a predetermined time” (e.g., 0.2 seconds), which is referred to as the selection

threshold. EX1003, ¶¶69, 147; EX1004, ¶[0049]. Dr. Cockburn identifies this “selection threshold” as allegedly corresponding to the claimed “first user-configurable predefined duration” See EX1003, ¶133. Thus, in the Initial Modification, the link information 510 and accompanying menu are displayed when the contact exceeds the “selection threshold” (first user-configurable predefined duration) rather than “when” the contact “is determined to be *greater than* the second user-configurable predefined duration,” as claimed. That is, the Initial Modification displays the alleged “menu” ([1.o.vii]) and “portion of the second web page” ([1.o.viii]) *before* the activation threshold prerequisite and contact prerequisite are met. *Id.*

85. The fact that the menu and link information remain on the display after the prerequisite conditions are met does not meet the plain language of the claims. As explained above, the claim 1 requires a program with instructions that cause the functions (e.g., displaying a context menu and further displaying at least a portion of the second web page) to be executed when the prerequisite elements are satisfied. In the Initial Modification, these functions are executed before the prerequisite elements are satisfied (not when or in response to) and a POSITA would understand that the continued display of the link information while a user maintains contact does not cause Blumenberg to execute the claimed functions. In other words, a POSITA would understand that Blumenberg is not programmed to execute instructions to

display link information 510 when the contact exceeds the activation threshold because the link information 510 is already displayed.

**3. Dr. Cockburn's Alternative Modification is Internally Inconsistent and Cannot Meet All the Claim Elements**

86. In analyzing Limitation [1.n.ii], Dr. Cockburn explains that “the contact *duration* is *greater than* the selection threshold (*first user-configurable predefined duration*), the link is selected and information associated with the link is displayed.” EX1003, ¶127. This selected link is then “activated by a contact break if the link information was displayed *less* than [a] predetermined amount of time” (activation threshold) EX1003, ¶127; EX1004, ¶[0051]. Thus, in mapping to Limitation [1.n.ii], the operation requires the “the link information was displayed” and the contact was broken within a predetermined amount of time (less than the activation threshold) after display of the link information. *Id.*

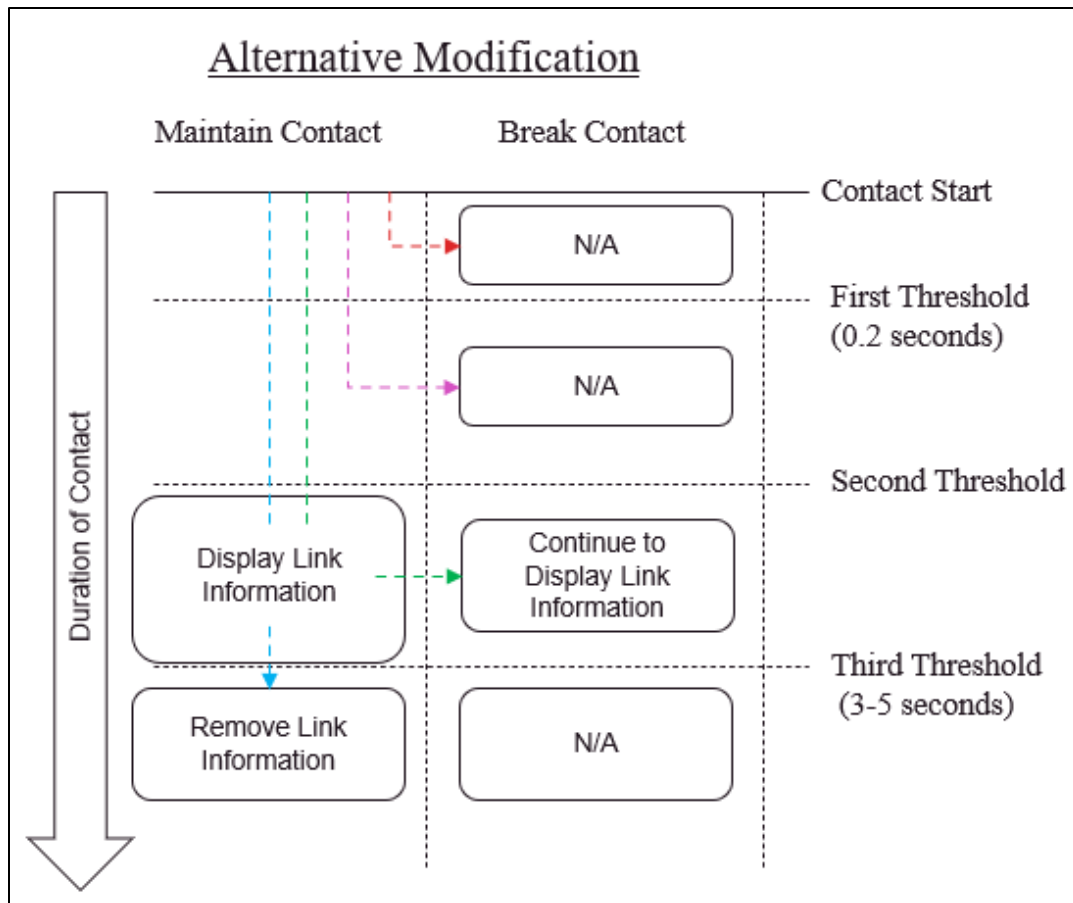
87. However, Dr. Cockburn's Alternative Modification requires that the link information would not be displayed until after the activation threshold. EX1003, ¶158. In this Alternative Modification, the link information is not displayed at the selection threshold and the user cannot activate the link by breaking contact as described in paragraph [0051] of Blumenberg. *See* EX1004, ¶[0051] (“link is activated by a contact break if the link information was displayed less than the first predetermined amount of time”). Therefore, by eliminating the display of the link information, Dr. Cockburn destroys the functionality to activate the link by

breaking contact after the display of the link information but before the activation threshold. Accordingly, either of Dr. Cockburn's mutually exclusive modifications cannot meet both Limitation [1.o.viii] and Limitation [1.n.ii].

**4. *A POSITA Would Not Have Made Dr. Cockburn's Alternative Modification – Link Information***

88. As explained in Section VI.A.2, Blumenberg displays the link information 510 (the *alleged* portion of the second web page) when the *selection* threshold is exceeded and not when the activation threshold is exceeded. EX1004, ¶¶[0049]-[0051]. Dr. Cockburn contends that a POSITA would have displayed a menu to occur in response to the user's contact duration exceeding the activation threshold based on the "Fourth motivation rationale regarding Bhumkar." EX1003, ¶158; *see* EX1003, ¶¶77-82. Dr. Cockburn further contends that Blumenberg's link information would be displayed with the menu "only after and as a consequence of the activation threshold." EX1003, ¶158. Dr. Cockburn does not provide a motivation for this modification regarding Blumenberg's link information. *Id.* Nor is there any logical motivation that would have prompted a POSITA to delay the display of Blumenberg's link information 510 until the activation threshold is met.

89. Referring to the flowchart of the Alternative Modification, this modification would render Blumenberg's first, "selection" threshold useless as there would no longer be any function associated with that threshold (e.g., no display of link information or menu).



90. In addition to destroying the primary functionality of Blumenberg, Dr. Cockburn’s Alternative Modification would also result in a slower and less efficient interface. As illustrated above, the user would no longer be able to open the link with a single contact. Instead, the user would only be able to activate the hyperlink by tapping and holding until the activation threshold and then by breaking contact and performing an additional confirmatory tap on the link information 510. *See* EX1004, ¶[0051] (“the user must break contact and tap the link information (which is continued to be displayed after the contact break) to activate the selected link”); EX1003, ¶63. Thus, the Alternative Modification would require the user to maintain

contact for a much longer period to activate the link information 510 and would also require additional user inputs. Such a modification is explicitly contrary to the motivations advanced by Dr. Cockburn—to perform tasks “more quickly and efficiently (e.g., with fewer user inputs).” EX1003, ¶73. A POSITA would not have made such a modification.

**5. *A POSITA Would Not Have Made Dr. Cockburn’s Alternative Modification – Menu***

91. As explained below, Petitioner’s motivations to incorporate Bhumkar’s toolbar into Blumenberg’s hyperlink preview are deficient. *Infra* §VII.C. Nevertheless, assuming *arguendo* that a POSITA would have incorporated Bhumkar’s toolbar into Blumenberg’s hyperlink preview, Dr. Cockburn’s specific modification to introduce “menu options to the displayed webpage preview after the duration of the user’s touch surpasses Blumenberg’s activation threshold” is independently deficient. EX1003, ¶81.

92. As explained above in my Section VII.B.4, a POSITA would not modify Blumenberg to display the link information 510 and toolbar when the activation threshold is met. Although not explicitly made, Dr. Cockburn appears to propose a second alternative modification to display link information 510 after a user’s touch surpasses a first, selection threshold and then display a toolbar after the user’s touch surpasses a second, activation threshold. *See* EX1003, ¶¶79-82. To the extent that Dr. Cockburn contends that a POSITA would display a toolbar at a

different time (e.g., after) than the link information is displayed, this is not supported by the teachings of the references.

93. Blumenberg discloses displaying all information associated with its hyperlink preview (e.g., URL, title, snippet of content, etc.) at the same time, after exceeding the *selection* threshold. See EX1004, ¶¶[0048]-[0049], FIGs. 5C, 5E. Similarly, Bhumkar displays its preview window 54 simultaneously with its integrated toolbar 56. See EX1005, ¶[0071], FIG. 5. Of course, because Bhumkar's toolbar 56 is integrated into the preview window 54 it must follow the operations of the preview window. For example, if a user performs certain operations on preview window 54 (e.g., closes the window, enlarges the window, shrinks the window, moves the window on the display, minimizes the window), the same operation will occur to the toolbar 56. Thus, neither Blumenberg nor Bhumkar (nor any other evidence of record) disclose an operation of displaying a pop-up window and then subsequently displaying a toolbar of that pop-up window based on a subsequent action. See e.g., EX1003, ¶79-82 (citing no independent evidence).

94. This modification to split Bhumkar's toolbar from its preview window is not only inconsistent with the teachings of Bhumkar. There is no evidence or teachings that suggest to de-integrate Bhumkar's toolbar from its preview window and display and incorporate this undisclosed operation into Blumenberg's hyperlink preview window.

**6. *A POSITA Would Not Have Employed Bhumkar's webpage "preview" in place of Blumenberg's "snippet of content."***

95. Dr. Cockburn further contends that "it would have been a matter of simple substitution to employ Bhumkar's webpage 'preview' in place of Blumenberg's 'snippet of content.'" EX1003, ¶152. To the extent that Dr. Cockburn is alleging a POSITA would have modified Blumenberg to replace the snippet of content with a fully functional webpage, this is not supported by Blumenberg. Furthermore, it is also not supported by Blumenberg when Dr. Cockburn is alleging a POSITA would have modified Blumenberg to replace the snippet of content with "an image of content from the second Web page." EX1003, ¶152.

96. As shown in FIG. 5F of Blumenberg, a handheld portable device is shown with the hyperlink preview displayed, which includes the URL name of the closest link and a snippet of content. A POSITA would have understood that the hyperlink preview 510 of Blumenberg's *mobile* user interface must deal with screen size constraints that are much more extreme than those found in *desktop* web browsers and previews like those discussed and depicted by Bhumkar. Compare EX1004 (Blumenberg), FIG. 5F with EX1005 (Bhumkar), FIG. 7; see EX1004, ¶[0004]. Thus, Dr. Cockburn's assertion that employing Bhumkar's "preview" in place of Blumenberg's "snippet of content" is a simple substitution is false. It would be well understood by a POSITA that "the biggest challenge in designing a Web site for a smartphone with a 320 x 480 screen resolution is how to cope with this dramatic

difference in screen size without sacrificing the user experience”. EX2004, 1-2. The 2011 publication date of EX2004 signifies the mobile screen resolution “320 x 480” (pixels) was very limited, especially compared to the much higher resolution mobile screens today, and it would have been especially challenging to display an image of an entire webpage on the screen of the mobile device while maintaining the legibility of that webpage. The deciding factor is the apparent font size of the text which determines its legibility, and smaller mobile screens are constrained when compared to larger desktop screens. Either a static image or live preview of a webpage from a desktop device such as those used in Bhumkar would in most cases be very difficult, if not impossible, to read when viewed on a mobile device such as those used in Blumenberg. Dr. Cockburn, again, attempts to simply substitute (i.e., copy and paste) the functionality of a desktop UI into a mobile UI, but this is contrary to the understanding of a POSITA—who knew the implementation of desktop UI features in a mobile UI was a “challenge.” *Id.*

97. In reality, incorporating either a functional webpage or an image of a webpage into Blumenberg’s hyperlink preview 510 would result in a poor user experience and is not something a POSITA would have done. First, as mentioned, the size of the resulting webpage (within Blumenberg’s hyperlink preview)—whether as an image of the webpage or as a fully functional webpage—would render it too small for a user to be able to read its content on a mobile device. EX1004,

¶[0004] (“A drawback of portable devices, however, is the small screen size.”). In fact, the entire problem that Blumenberg seeks to solve is that small screen size of portable devices “limits the amount of information and/or the size of the information that can be shown on the screen.” *Id.* Thus, Blumenberg notes it is difficult to read and navigate webpages when they are displayed on the entire mobile screen. EX1004, ¶[0004] (“This limitation can pose problems for web browsing on such devices because links in webpages displayed on a small screen may not be perceived easily by users.”). It would be unreasonable to think that Blumenberg intends to display a webpage on a sub-window that is much smaller than the area of the mobile screen. EX1004, FIG. 5F (showing display area of preview window that is only a fraction of the area of the screen). And the small size of the preview window would require the webpage to be much smaller than in the normal web browsing operation, which is contrary to the focus of Blumenberg to display its link information “at a legible size.” EX1004, ¶[0053]. Therefore, the idea that Dr. Cockburn offers of using Bhumkar’s desktop “image of content from the second Web page” as a mobile preview in Blumenberg rather than Blumenberg’s “snippet of content” would result in a largely illegible and therefore unusable preview of the webpage content.

98. In the case where the mobile webpage preview is a fully functional webpage, the operation of a webpage that is displayed in Blumenberg’s hyperlink preview window would also be extremely difficult. As mentioned above, the size of

the webpage would be much smaller and result in information that is displayed very close together and often illegible. As explained in *Blumenberg*, navigation of a webpage (e.g., the selection of links) is difficult even when it is displayed on the entire screen of the device. EX1004, ¶[0004]. A POSITA would understand the navigation of the webpage would be much more difficult when displayed within the even smaller hyperlink preview window of *Blumenberg*. Further, the implementation of a functional webpage in *Blumenberg*'s hyperlink preview window would require the device to be showing two operational browsers at the same time. While the operation of two different, concurrently displayed browser windows is not problematic in a desktop user interface (with a comparatively larger screen, as well as keyboard, mouse, cursor, etc.), it would be exceedingly difficult on *Blumenberg*'s mobile device. Accordingly, a modification to replace the snippet of content in *Blumenberg*'s link information 510 with a fully functional webpage would also lead to a poor user experience and is not something a POSITA would have done. See e.g., EX1004, ¶[0004] (poor webpage navigation can “frustrate users and make the web browsing experience on portable devices cumbersome”).

**C. A POSITA Would Not Have Been Motivated to Modify *Blumenberg*'s Link Information to Have a Menu**

99. A POSITA would understand that *Blumenberg* discloses a mobile device or portable electronic device. EX1004, ¶[0020]. On the other hand, a POSITA would understand that *Bhumkar* discloses a desktop browser. EX1005,

¶¶[0065] (“ using desktop search tools”), [0089], FIGs. 1, 2, 5. Further, a POSITA would have been aware that the functionality of user interfaces in desktop browsers was quite different than the functionality of user interfaces in portable electronic devices. *See* EX2004, 1 (successful mobile sites differ from desktop Web sites).

***1. Petitioner’s Modification is Illogical and Inconsistent with a POSITA’s Understanding***

100. Dr. Cockburn has not adequately shown that a POSITA would have found it obvious to apply Bhumkar’s desktop browser functionality to Blumenberg’s portable electronic device, especially given the device’s “small screen size,” which “limits the amount of information and/or the size of the information that can be shown on the screen.” *See* EX1004, ¶[0004]; *see* EX2004, 1-2 (the “biggest challenge” in designing UI in mobile devices “is how to cope with this dramatic difference in screen size *without* sacrificing the user experience”). Instead of addressing these challenges between desktop and mobile interfaces, Dr. Cockburn simply ignores them. Often, applying a desktop UI solution to a mobile context requires re-designing that solution. A POSITA would not simply cut and paste a function from a desktop UI to a mobile one (as Dr. Cockburn proposes) without evaluating how that function would affect the mobile UI and user experience.

101. Thus, Dr. Cockburn’s analysis is not consistent with that of a POSITA—who would have understood the stark differences between desktop and

mobile UIs and would not have blindly transferred desktop browser functionality into a portable electronic device.

102. Bhumkar's desktop browser functionality is not compatible with Blumenberg. Blumenberg provides a hyperlink preview (e.g., magnification of the URL and, optionally, a snippet of text from the URL) that provides quick, easy to read information to help the user confirm correct finger contact with the selected hyperlink. *Supra*, §VI.A.2; *see also* EX1004, ¶[0053] (text in hyperlink preview "is displayed at a legible size, such as 14 point or larger" including "18 point text."). This emphasis on large text size in conjunction with the small screen size of portable devices limits the amount of information that can be displayed in, and the functionality of, the hyperlink preview.

103. This is incompatible with Bhumkar's objective to provide a preview window of "a fully functioning web page" (EX1005, ¶[0070]) in a conventional desktop browser, where the preview window includes the same functionality (e.g., toolbar) provided in the conventional desktop browser (*id.*, ¶[0040]). As shown in FIG. 5 of Bhumkar and explained in my Section VI.B, Bhumkar includes two windows: a main window (conventional web browser) with a toolbar and a fully operational webpage and a second, preview window with another fully operational webpage and toolbar. Bhumkar utilizes this second, preview window (with fully operational webpage) to overcome the challenges in determining the relevance of

webpages when the user is only presented with a URL name and snippet of text which provide “little or no information on which to base a decision as to the relevance of the associated web page.” EX1005, ¶[0006]; *see also id.*, ¶[0005] (the “few lines of text clipped from the target web page [...] is usually limited to a few words which may or may not help the searcher in assessing the relevancy of the returned result”). This URL name and snippet of text is exactly what is displayed in Blumenberg’s hyperlink preview. EX1004, ¶[0040]. Thus, Bhumkar explicitly criticizes the information shown in Blumenberg’s non-functional and comparatively abbreviated hyperlink preview. A POSITA would understand that the implementation of the functionality (e.g., toolbar) provided in the conventional desktop browser would be inapplicable to Blumenberg’s non-functional (and compared to a Bhumkar’s desktop preview, tremendously terser) mobile hyperlink preview. In fact, as explained above in my Section VI.B, a POSITA would have understood that Bhumkar actively chooses not to implement his toolbar in a “quick view” that is a static image of a webpage. *Compare* FIGs. 2 and 4 (no toolbar) *with* FIG. 5 (toolbar); *see* EX1005, ¶¶[0049]-[0050] (describing FIG. 2 as a non-functional “image of the actual web page”) [0071] (describing FIG. 5 as “a fully functioning web page”). Thus, a POSITA would understand that Bhumkar suggests to not include a toolbar/menu in webpage previews that lack full webpage functionality like Blumenberg’s link information.

104. Dr. Cockburn simply dismisses this incongruity and contends a POSITA would be motivated to add a toolbar with sharing functionality to Blumenberg's hyperlink preview. *See* EX1003, ¶¶73, 146. Thus, despite the understanding that Blumenberg's hyperlink preview provides "little or no information" on the relevancy of the hyperlink (EX1005, ¶[0006]), Dr. Cockburn alleges that a POSITA would provide a menu option to allow a user to share Blumenberg's hyperlink preview without actually viewing the webpage associated with the previewed hyperlink. *See* EX1003, ¶73. Dr. Cockburn contends a POSITA would make such a modification because "applying Bhumkar's teaching of a menu for a webpage preview window would predictably improve Blumenberg's browser from a usability standpoint." EX1003, ¶73. But, Bhumkar's teaching is contrary to the proposed modification, as Bhumkar's proposed solution seeks to avoid relying on the information provided in Blumenberg's hyperlink preview—not sending this irrelevant information to another user to rely on. EX1005, ¶[0006] (to determine relevancy "the searcher must actually click through to the target web page associated with the link").

105. Dr. Cockburn also provides another incompatible example of adding Bhumkar's full screen icon to Blumenberg's hyperlink preview. EX1003, ¶149. However, a POSITA would have understood that implementing a "full screen icon" into Blumenberg's hyperlink preview offers no improvement in functionality or any

other logical benefit. Bhumkar explains the “Full-screen icon **60** initiates a full-screen mode to enhance the consumption of information displayed in the current preview window **54**.” EX1005, ¶[0073]. This is beneficial because “the content of the preview window may be more easily consumed in the full screen mode.” *Id.* For example, the fully operational webpage shown in the Bhumkar’s preview window can include information and text that is not shown in the window—as indicated by the horizontal and vertical scrollbars in Bhumkar’s FIG. 5.

106. This full screen functionality is not relevant to Blumenberg’s hyperlink preview. As explained above, the link information 510 in Blumenberg’s hyperlink preview not a functional webpage; it merely displays the URL or short snippet of text. EX1004, ¶[0040]; *see* FIGs. 5C, 5E-5H. Further, the entirety of the Blumenberg’s link information 510 is shown within the preview window (i.e., there is no missing text that necessitates scrolling as in Bhumkar). *See* EX1004, ¶[0040] and FIGs. 5C, 5E-5H. Dr. Cockburn’s implementation of a full screen icon in Blumenberg’s hyperlink preview would only serve to enhance the blank space displayed in the current hyperlink preview window. EX1005, ¶[0073]. This is not something a POSITA would have done.

107. Contrary to the full screen functionality described in Bhumkar, Dr. Cockburn contends that the full screen icon “involves opening the new browser window/tab” to navigate to the corresponding webpage of the URL displayed in the

preview window. EX1003, ¶149. But a POSITA would have understood that “selecting [a] full screen icon” associated with a window does **not** “navigate to the corresponding page” of a hyperlink displayed in that window. EX1005, ¶[0073]. Instead, it “initiates a full-screen mode [...] of information displayed in the current preview window **54.**” EX1005, ¶[0073]. Dr. Cockburn misrepresents Bhumkar’s full screen functionality and seeks to implement an entirely different functionality. Accordingly, the proposed modification is not supported by Bhumkar and is contrary to a POSITA’s understanding of full screen functionality.

108. Dr. Cockburn does not allege to incorporate any other functionality from Bhumkar’s toolbar outside of the sharing icon and full screen icon. *See* EX1003, ¶¶146-149. As explained above, this functionality of Bhumkar’s **desktop toolbar** is not applicable to Blumenberg’s mobile preview interface—confirming a POSITA’s understanding that desktop UI functionality is different than mobile UI functionality. *See* EX2004, 1 (explaining that mobile sites do not follow the same guidelines as desktop websites). While EX2004 is concerned with the design and user experience differences between mobile and desktop websites, its teachings are also applicable to the design and user experience differences between mobile and desktop user interfaces in general. As such, a POSITA would not include Bhumkar’s desktop toolbar functionality into Blumenberg’s mobile user interface as mobile designs “include only the most crucial functions and features.” EX2004, 1-2

(“While desktop Web sites often contain a wide range of content, mobile sites usually include only the most crucial functions and features”). This conclusion is further corroborated when looking at the remaining functionality of Bhumkar’s conventional toolbar (e.g., Back, Jump to, RSS, WAP, Sidekick, Stumble, Full Screen). This functionality—which is designed for fully functional webpages—would be inapplicable and unworkable when applied to Blumenberg’s non-functioning link information. For example, the back function (allows a user to trace his/her click history within a current preview session) cannot be performed on Blumenberg’s link information 510 as there is no functional operation to go “back” on. Accordingly, a POSITA would not have incorporated a toolbar into Blumenberg’s link information 510 based on Bhumkar’s use of conventional toolbar functionality in a preview window of a fully operational webpage. It is also important to note that Blumenberg’s mobile hyperlink preview is designed to help a mobile user decide whether to *open* a hyperlink, not whether to share it. A POSITA would further understand that mobile UI design practice incorporates a “sharing” functionality on a fully viewable mobile interface object, *not* on its abbreviated preview.

**2. *Petitioner’s Motivations Do Not Resolve the Incongruities in the Purported Modification***

109. Dr. Cockburn’s four proposed motivations for incorporating providing a toolbar (menu options) into Blumenberg’s hyperlink preview does not remedy the inconsistencies noted above in the proposed modification. *See* Section VII.C.1

**a) *The Use of Menus in Applications or Other Context Does Not Explain Why a POSITA Would Have Made the Proposed Modifications***

110. Dr. Cockburn’s first motivation is that “providing menu options associated with the displayed content of an application or information window was a ubiquitous feature in computer GUIs.” EX1003, ¶¶71-72. Dr. Cockburn continues that “Bhumkar employs a menu to augment a webpage preview for this purpose, and it would have been axiomatic for a POSITA to do the same in the context of Blumenberg’s ‘link information’ that similarly previews webpage content.” *Id.*

111. Dr. Cockburn largely relies on his statement that menus were widely used in mobile applications. *See* EX1003, ¶71 (In the context of touch screen mobile devices, a POSITA would have known that “[a]ll but the simplest applications have menus.”). However, the fact that menus were widely used in mobile applications provides absolutely no explanation as to why a POSITA would have incorporated Bhumkar’s *desktop* toolbar into Blumenberg’s mobile preview interface. The way that menus are used in desktop UIs is different from how they are used in mobile UIs and the solution proposed in Bhumkar does not translate to a mobile UI context

without fundamental rethinking and redesign for a mobile UI context. Dr. Cockburn does not do this and simply pastes a *desktop menu* on top of a mobile web preview. Evidence that menus were used in mobile applications cannot support the specific modification that Dr. Cockburn alleges.

112. Further, a POSITA would have understood that Blumenberg's link information is not an application, as used in the context of mobile devices. In other words, Blumenberg's link information functionality can work in a mobile application, but it is not itself a mobile application in the manner used by Dr. Cockburn. Blumenberg confirms this by listing "examples of applications" in its paragraph [0030], where the hyperlink preview functionality is not listed. EX1004, ¶[0030] (Examples of applications "include telephone applications, email applications, text messaging or instant messaging applications, memo pad applications, address books or contact lists, calendars, picture taking and management applications, and music playing and management applications"). Thus, while Blumenberg's hyperlink preview functionality can work within a mobile application, (e.g., "web browser 131"), it is not itself a mobile application. EX1004, ¶¶[0030]-[0031]. Therefore, the use of menus in mobile applications does not provide any reasoning as to why a menu would be incorporated into Blumenberg's link information. Even in the case of "contextual menus" in mobile applications as discussed by Cockburn (EX1003, ¶73), where a menu can pop-up in relation to an

interface object *within* a mobile application, the fact is that Blumenberg's preview is likely insufficient to provide enough information to a mobile user such that they could decide to share that mobile preview or its related hyperlink of the as yet unseen webpage. Blumenberg's mobile preview is intended to provide enough information to assist the mobile user in deciding whether to *open* the previewed webpage, not whether to share the preview itself or its related hyperlink or the as yet unseen full webpage. A POSITA would understand that it is *after* the previously unseen mobile webpage is opened—and its now viewable information would more closely approximate the full web page preview in Bhumkar—that at this point, and not before, a mobile user would have the necessary information to make a sharing decision. Bhumkar's entire critique of the deficiency of brief textual previews (EX1005, ¶[0006]) vs. a full webpage preview underscores this issue in relation to deciding whether or not to *open* a hyperlink. A POSITA would understand that the information a user requires to decide whether to *share* a hyperlink whose webpage they have not seen before would be even more than that needed to make a decision about whether to open the webpage. Therefore, a POSITA would understand that while it could make sense in the desktop UI context in Bhumkar to have a sharing functionality in the contextual menu related to the full webpage preview, Bhumkar's own teaching would suggest that Blumenberg's highly abbreviated mobile preview

does not have the requisite information to include a sharing option before the hyperlink is opened.

113. Further, for the reasons explained in my Section VII.C.1 above, it is **not** the case that Blumenberg’s link information “similarly previews webpage content” in the way that Bhumkar’s webpage preview does—which is what the Petition alleges. Pet., 15. Bhumkar’s webpage preview window is a fully functioning webpage or image<sup>4</sup> thereof, while Blumenberg’s link information provides a non-functional highly abbreviated textual preview of the webpage that displays information considered unusable by Bhumkar to function as a valid preview of a webpage. A POSITA would not have considered it “axiomatic” to add a toolbar with conventional desktop browser functionality to Blumenberg’s non-functional link information. Section VII.C.1; EX2004, 1-2.

114. Additionally, the desktop toolbar menu, as shown in Bhumkar’s preview window, includes several small icons that are grouped together. A POSITA would have understood that adding such a toolbar menu with multiple clustered icons into Blumenberg’s mobile interface would introduce the exact hit-or-miss character that Blumenberg tries to avoid. See EX1004, ¶[0004]. It is not a

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<sup>4</sup> Importantly, Bhumkar’s quick (i.e., non-functional) preview that uses a static image of the webpage does **not** include the toolbar 56. Compare FIGs. 2 and 4 with FIG. 5; see EX1005, ¶[0071] (describing FIG. 5 as “a fully functioning web page”). Thus, Bhumkar teaches that a toolbar/menu would not be included in a non-functional window, like Blumenberg’s preview. *Id.*

coincidence that Blumenberg’s operations (e.g., to activate a link, display link information, or remove the display of link information) do not include the selection of small or neighboring icons. Indeed, this is the entire focus of Blumenberg—to avoid the mis-selection of options within the small screen size of a mobile interface. EX1004, ¶[0004]. Incorporating a menu of options within Blumenberg’s link information would be contradictory to Blumenberg’s objectives as it would require placing small icons next to one another (as in toolbar 56) and would increase the risk on an inadvertent selection.

**b) Petitioner Fails to Establish Bhumkar’s Sharing Functionality Would Necessitate a Menu or Improve Usability**

115. Dr. Cockburn’s second motivation is that “applying Bhumkar’s teaching of a menu for a webpage preview window would predictably improve Blumenberg’s browser from a usability standpoint” because providing menu options “allow the user to accomplish common tasks associated with the target webpage (e.g., sharing the page with an acquaintance) more quickly and efficiently (e.g., with fewer user inputs).” EX1003, ¶73. But again, a POSITA would understand that the conventional desktop browser functionality in Bhumkar’s toolbar would **not** predictably improve Blumenberg’s mobile user interface. *See* Section VII.C.1; EX2004 1, (design of mobile websites are not expected to follow the same guidelines as desktop websites).

116. As explained above, the functionality of a conventional desktop browser (e.g., Back, Jump to, RSS, WAP, Sidekick, Stumble, Full Screen) is not applicable to Blumenberg's link information window. *See* Section VII.C.1. And the asserted functionality (e.g., sharing and full screen) does not provide the associated benefits when implemented into Blumenberg's operation. *See id.* And, again, Dr. Cockburn's motivation is misguided as it mischaracterizes Blumenberg's link information as being a web browser. Blumenberg describes its hyperlink preview functionality independent from (and different than) a web browser. For example, Blumenberg explains the hyperlink preview functionality is not limited to "a webpage" but would also function with "other document[s]" (i.e., documents not displayed in a web browser). EX1004, ¶[0045]. Thus, Blumenberg does not disclose a "browser with a superior interface" as Dr. Cockburn alleges.

117. Blumenberg's link information does not allow full navigation of the webpage or even display the webpage associated with the hyperlink, thus, there is no reason to provide conventional desktop toolbar functionality for Blumenberg's link information. And a POSITA would not expect the implementation of this conventional desktop toolbar functionality to provide an improved web browser for a mobile device, especially given the known differences between the functionality and UIs of desktop and mobile browsers.

118. A POSITA would understand that the share function associated with Bhumkar's preview window is beneficial because the preview window is a fully functioning web page that allows the user to determine that its associated link is truly relevant. *see* EX1005, ¶[0039]; *see also id.*, ¶¶[0005]-[0006], [0071]. Instead of blindly sharing the hyperlink after viewing the URL and text clipped from the target web page, Bhumkar allows the user to view the content of the webpage associated with the hyperlink in the preview window and then "share some or all of the content of the preview window." EX1005, ¶[0043]; *see also id.*, ¶[0021] ("share **contextual information** concerning the second Web page," not just the hyperlink). In Dr. Cockburn's modifications, the user cannot use Blumenberg's hyperlink preview to navigate to the webpage to determine whether the associated link is truly relevant. EX1004, ¶[0040]. Further, because the webpage is not activated within Blumenberg's hyperlink preview, the browser does not have access to the information associated with that webpage other than the short snippet of text. Accordingly, the user is not able to send contextual information of the webpage (as is taught in Bhumkar) and the user can only send the hyperlink (and potentially include Blumenberg's short snippet itself). Thus, the implementation of desktop functionality does not provide the same benefits or solutions when incorporated into Blumenberg non-functional hyperlink preview.

119. Additionally, Dr. Cockburn’s assertion that the proposed modification shares the webpage “with fewer user inputs” is misleading. *See* EX1003, ¶73. Blumenberg does not describe any sharing functionality that may be associated with his hyperlink preview in its related browser application, or any sharing functionality that may be associated with his other previewable objects (e.g., email, text message, or some other document) in their other related applications. *See* EX1004, ¶[0041]. A POSITA would not understand that adding a function that is not described in Blumenberg does not automatically result in that functionality being performed more quickly and efficiently. Instead, this comparative assertion (fewer user inputs) must have an actual point of comparison to be properly analyzed. But Dr. Cockburn does not provide such a comparison. EX1003, ¶73.

120. Nor would this necessarily be the case. For example, consider a scenario (“example modification”) where Blumenberg’s hyperlink functionality was employed in a web browser that included a toolbar with a share function, similar to the conventional desktop web browsers described in Bhumkar. *See* EX1005, ¶[0040] (conventional browser functionality includes a Share function). This example requires the same number of inputs as Petitioner’s modification. To illustrate, the user could activate the link (first input) to be taken to the webpage—as in Blumenberg’s first or second scenario—browse the webpage to determine its relevancy, and then select the share icon from the browser toolbar (second input) to

bring up a mobile UI object performing a similar function to the desktop sharing dialog of Bhumkar (EX1005, FIGURE 7, Item 68). This is the same amount of user input as would be required in Petitioner’s modification—first contact to bring up link information 510 and second contact to select share icon in modified menu. *See* Pet., 21 (requirement to give a confirmatory tap input). Thus, by providing an actual point of comparison, Dr. Cockburn’s alleged improvement is shown to be false.

**c) Bhumkar’s Teachings are Contrary to Petitioner’s Modification**

121. Dr. Cockburn’s third motivation is that “a POSITA would have been prompted to pursue this combination based on Bhumkar’s express teachings and motivations.” EX1003, ¶75. Without providing any detailed comparison of the desktop system in Bhumkar and the mobile system in Blumenberg, Dr. Cockburn alleges a POSITA would understand “the similarities between Blumenberg’s ‘link information’ and Bhumkar’s webpage preview” and “sought to predictably improve Blumenberg’s browser in the same way Bhumkar did.” EX1003, ¶76.

122. However, Dr. Cockburn merely relies on the commonality that both interfaces use preview windows and ignores the very large differences between desktop and mobile user interfaces, and that ideas and insights from one are not automatically applicable to the other. *See* EX2004, 1. This oversight is fatal to Dr. Cockburn’s analysis as a POSITA would not simply overlook the differences between desktop and mobile user interfaces, nor would they overlook the differences

between fully functional webpages and non-functional hyperlink previews. As admitted by Dr. Cockburn, “Bhumkar’s solution involves providing a window to display a *preview of a target webpage*.” EX1003, ¶76. Providing a fully functional webpage in preview window (with a conventional desktop toolbar) is not similar to Blumenberg’s magnified display of the URL name of a hyperlink or Blumenberg’s “snippet of content” (a highly abbreviated textual preview of a webpage). See Section VII.C.1

**d) Blumenberg’s Teachings are Contrary to Petitioner’s Modification**

123. Dr. Cockburn’s fourth motivation is that “a POSITA would have been prompted to pursue this combination based on the teachings, suggestions, and motivations evident from Blumenberg.” EX1003, ¶77. Specifically, Dr. Cockburn references Blumenberg’s scenario in which “when the touch is maintained for a duration that is greater than the activation threshold (e.g., a hold), the browser maintains a preview of the targeted webpage (‘link information’ featuring a ‘snippet of content’) and requires a confirmatory tap before activating the selected link and loading the target webpage” (the third scenario). EX1003, ¶79.

124. Dr. Cockburn contends this scenario requires a confirmatory tap to address “the user’s competing interests in [i] potentially interacting with the candidate target webpage; and/or [ii] leaving the current webpage” and asserts that to address these competing interests “the POSITA would have sought to integrate

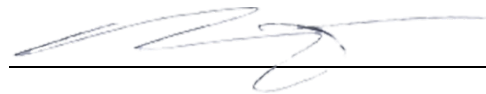
functionality for the user to interact with the target webpage without leaving the current webpage.” EX1003, ¶¶79-80. However, Dr. Cockburn’s modifications to add a menu (or share functionality) does not enable a user to interact with the target webpage without leaving the current webpage, as alleged. This proposed modification merely allows the user to *email the hyperlink* of the target webpage and provides no ability to *interact with the target webpage*. In other words, the proposed modification essentially provides the functionality of copying and pasting the hyperlink into an email interface. As the modification is not commensurate with Dr. Cockburn’s motivation (to integrate functionality for the user to interact with the target webpage), this motivation cannot establish why a POSITA would have made the proposed modification, especially in light of the contradictory teachings explained in my Section VII.C.1.

## VIII. CONCLUSION

125. All statements made herein of my own knowledge are true, all statements made herein on information and belief are believed to be true, and these statements were made with the knowledge that willful false statement and the like are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Respectfully submitted,

Dated: October 22, 2024

A handwritten signature in blue ink, appearing to read 'Marc Davis', is written over a horizontal line.

Marc Davis, Ph.D.