UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

META PLATFORMS, INC.
Petitioner

v.

MOBILE DATA TECHNOLOGIES, INC.,
Patent Owner

Case IPR2024-00250
U.S. Patent No. 9,922,348 B2
Issue Date: March 20, 2018

Title: METHOD, APPARATUS AND SYSTEM FOR MANAGEMENT OF INFORMATION CONTENT FOR ENHANCED ACCESSIBILITY OVER WIRELESS COMMUNICATION NETWORKS

DECLARATION OF VIJAY K. MADISETTI, PH.D.

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2. Claim 2: "The apparatus of claim 1 wherein at least one of the first device-captured data and the second device-captured data comprises image data." 99

3. Claim 3: "The apparatus of claim 1 wherein at least one of the first device-captured data and the second device-captured data comprises video data." 99

4. Claim 6: "The apparatus of claim 1 wherein a given one of the first and second mobile devices comprises one of a mobile telephone, a tablet computer, a GPS-based navigational device, a watch and a portable game player." 102

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6. Claim 8: "The apparatus of claim 1 wherein the web-based shared information channel is configured to allow a given one of the first and second users to enter a message via the personalized content application of its corresponding mobile device and wherein the message is integrated with the first and second device-captured data into a persistent version of a given set of shared information content of the web-based shared information channel so as to be accessible with the first and second device-captured data to the first and second users of the respective first and second mobile devices via the respective personalized content applications of the first and second mobile devices." 104

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8. Independent Claim 12: "A network-based communication system comprising a plurality of servers configured to communicate over said at least one network, a given one of the servers comprising the apparatus of claim 1." 107

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   (b) "receiving second device-captured data from a second mobile device over said at least one network; and" (Claim 13[b]) 110

   (c) "integrating the first and second device-captured data into a web-based shared information channel controllably accessible to first and second users of the respective first and second mobile devices via respective personalized content applications of the first and second mobile devices." (Claim 13[c]) 110

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10. Claim 14: "The method of claim 13 further comprising: [a] receiving in the web-based shared information channel a message from one of the first and second users via the personalized content application of its corresponding mobile device; and [b] delivering the message over said at least one network to another one of the first and second users via the personalized content application of its corresponding mobile device; [c] wherein the message is integrated with the first and second device-captured data into a persistent version of a given set of shared information content of the web-based shared information channel so as to be accessible with the first and second device-captured data to the first and second users of the respective first and second mobile devices via the respective personalized content applications of the first and second mobile devices." 111

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    (a) "to receive first device-captured data from a first mobile device over at least one network;" (Claim 17[a]) 113

    (b) "to receive second device-captured data from a second mobile device over said at least one network; and" (Claim 17[b]) 113

    (c) "to integrate the first and second device-captured data into a web-based shared information channel controllably accessible to first and second users of the respective first and second mobile devices via respective personalized content applications of the first and second mobile devices." (Claim 17[c]) 113

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12. Claim 18: "The non-transitory computer-readable storage medium of claim 17 wherein said executable program code when executed by said processing element further causes said processing element: to receive in the web-based shared information channel a message from one of the first and second users via the personalized content application of its corresponding mobile device; and to deliver the message over said at least one network to another one of the first and second users via the personalized content application of its corresponding mobile device; wherein the message is integrated with the first and second device-captured data into a persistent version of a given set of shared information content of the web-based shared information channel so as to be accessible with the first and second device-captured data to the first and second users of the respective first and second mobile devices via the respective personalized content applications of the first and second mobile devices." 114

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2. Claim 5: "The apparatus of claim 1 wherein at least one of the first device-captured data and the second device-captured data comprises: location-identifying information of the corresponding mobile device; and at least one of device-captured image data and device-captured video data associated with a capture location identified by the location-identifying information." 115

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I, Vijay K. Madisetti, Ph.D., declare as follows:

I. INTRODUCTION AND QUALIFICATIONS

A. Qualifications and Experience

1. I received my Bachelor of Technology (Honors) in Electronics and Electrical Communication Engineering at the Indian Institute of Technology (IIT) in Kharagpur, India in 1984. I obtained my Ph.D. in Electrical Engineering and Computer Science at the University of California, Berkeley, in 1989. I received the Demetri Angelakos Outstanding Graduate Student Award from the University of California, Berkeley and the IEEE/ACM Ira M. Kay Memorial Paper Prize in 1989.

2. I am a tenured full professor in the colleges of computing and engineering at the Georgia Institute of Technology ("Georgia Tech"). I am knowledgeable and familiar with wireless communications, microprocessor architecture, hardware, RF, cellular networks, ASIC design, computer engineering, embedded systems, digital signal processing, and associated software and firmware design for wireless and telecommunications terminals and base stations. I have created and taught undergraduate and graduate courses in hardware and software design for signal processing and wireless communication circuits at Georgia Tech for the past twenty years. Additionally, I have been active in the areas of wireless communications, digital signal processing, integrated circuit design (analog &

digital), software engineering, system-level design methodologies and tools, and software systems. I have been the principal investigator ("PI") or co-PI in several active research programs in these areas, including DARPA's Rapid Prototyping of Application Specific Signal Processors, the State of Georgia's Yamacraw Initiative, the United States Army's Federated Sensors Laboratory Program, and the United States Air Force Electronics Parts Obsolescence Initiative. I have received an IBM Faculty Award and NSF's Research Initiation Award.

3. I have designed several specialized computer and communication systems over the past two decades at Georgia Tech for tasks such as wireless audio and video processing and protocol processing for portable platforms, such as cell phones and PDAs. I have worked on designing systems that are efficient from performance, size, weight, area, and thermal considerations. I have developed courses and classes for the industry on these topics, and many of my lectures in advanced computer system design, developed under the sponsorship of the United States Department of Defense in the late 1990s, are available for educational use at "http://www.eda.org/rassp" and have been used by several U.S. and international universities as part of their course work. Some of my recent publications in the area of design of wireless communications systems and associated protocols are listed in Exhibit A. I graduated more than 20 Ph.D. students that now work as professors or

in technical positions around the world.

4. I have been active in research in the area of the World Wide Web and some of my peer-reviewed publications in this area include (i) Arshdeep Bahga and Vijay K. Madisetti, Performance Evaluation Approach for Multi-Tier Cloud Applications, Journal of Software Engineering and Applications 74-83 (2013); (ii) Arshdeep Bahga and Vijay K. Madisetti, Synthetic Workload Generation for Cloud Computing Applications, Journal of Software Engineering and Applications 396-410 (2011); (iii) Venu Dasigi and Vijay Madisetti, A Web-Based Interface for a Digital Broadband Home, Yamacraw IAB Workshop (2000); and (iv) Arshdeep Bahga and Vijay K. Madisetti, Rapid Prototyping of Multitier Cloud-Based Services and Systems, Computer, vol. 46, no. 11, pp. 76-83 (Nov. 2013).

5. I have been an active consultant to industry and various research laboratories (including Massachusetts Institute of Technology Lincoln Labs and Johns Hopkins University Applied Physics Laboratory). My consulting work for MIT Lincoln Labs involved high resolution imaging for defense applications, where I worked in the area of prototyping complex and specialized computing systems. My consulting work for the Johns Hopkins Applied Physics Lab ("APL") mainly involved localization of objects in image fields, where I worked on identifying targets in video and other sensor fields and identifying computer architectures and

circuits for power and space-efficient designs.

6. I have founded three companies in the areas of embedded software, military chipsets involving imaging technology, and wireless communications. I have supervised the Ph.D. dissertations of over twenty engineers in the areas of computer engineering, signal processing, communications, rapid prototyping, and system-level design methodology, of which five have resulted in thesis prizes or paper awards. The first of the companies I founded, VP Technologies, offers products in the area of semiconductor integrated circuits, including building computing systems for imaging systems for avionics electronics for the United States Air Force and the US Navy, since 1995. I remain a director of VP Technologies. The second of these companies, Soft Networks, LLC, offers software for multimedia and wireless computing platforms, including the development of a set-top box for Intel that decodes MPEG-2 video streams, wireless protocol stacks, and imaging codecs for multimedia phones. The technology involved with the design, development, and implementation of the Intel set-top box included parsing the bit streams, decoding communications protocols, extracting image and video data, and then processing for subsequent display or storage. The third of these companies, Elastic Video, uses region of interest based video encoding or decoding for capturing high quality video at very low bit rates, with primary application for

wireless video systems.

7. I have authored more than sixty refereed journal publications and around forty peer-reviewed conference publications. I have been active in research in the area of wireless and mobile communications and some of my recent peer-reviewed publications in this area include: (i) Mustafa Turkboylari & Vijay K. Madisetti, Effect of Handoff Delay on the System Performance of TDMA Cellular Systems, Proceedings of the Fourth IEEE Conference on Mobile and Wireless Communications Network 411-15 (Sept. 9-11, 2002); (ii) Loran A. Jatunov & Vijay K. Madisetti, Computationally-Efficient SNR Estimation for Bandlimited Wideband CDMA Systems, 5 IEEE Transactions on Wireless Communications, no. 12 (2006) at 3480-91; and (iii) Nimish Radio, Ying Zhang, Mallik Tatipamula & Vijay K. Madisetti, Next Generation Applications on Cellular Networks: Trends, Challenges, and Solutions, 100 Proceedings of the IEEE, no. 4 (April 2012) at 841-54. I have extensive experience analyzing, designing, and testing systems based on 3GPP Technical Specifications, including specifications describing WCDMA and HSDPA technologies. I have been active in the area of location-based services and wireless localization techniques since the mid-1990s, and have authored several papers on location-based services, including, Vijay K. Madisetti et al., Mobile Fleet Application Using SOAP and System on Devices (SyD) Middleware Technologies,

Communications, Internet, and Information Technology (2002) at 426-31. I have served as associate editor or on the editorial board for technical journals, including IEEE Transactions on Circuits & Systems II, International Journal in Computer Simulation, and International Journal in VLSI Signal Processing.

8. I have authored or co-authored several books, including VLSI Digital Signal Processors (IEEE Press 1995) and the Digital Signal Processing Handbook (CRC Press, 1998, 2010). I co-authored Quick-Turnaround ASIC Design in VHDL (Kluwer Academic Press 1996) and Platform-Centric Approach to System-on-Chip (SoC) Design (Springer 2004). I am also the editor of several books, including the three-volume DSP Handbook set: Volume 1: Digital Signal Processing Fundamentals, Volume 2: Video, Speech, and Audio Signal Processing and Associated Standards, and Volume 3: Wireless, Networking, Radar, Sensory Array Processing, and Nonlinear Signal Processing, published in 2010 by CRC Press, Boca Raton, Florida. More recently I have authored Cloud Computing (2014, CreateSpace Press), and Internet of Things (2014, CreateSpace), and the book, Cloud Computing, was nominated as a Notable Book of 2014 by the Association of Computing Machinery (ACM) in July 2015.

9. I have been elected a Fellow of the IEEE, for contributions to embedded computing systems. The Fellow is the highest grade of membership of the IEEE, a

world professional body consisting of over 300,000 electrical and electronics engineers, with only one-tenth of one percent (0.1%) of the IEEE membership being elected to the Fellow grade each year. Election to Fellow is based upon votes cast by existing Fellows in IEEE. I have also been awarded the 2006 Frederick Emmons Terman Medal by the American Society of Engineering Education for contributions to Electrical Engineering, including authoring a widely used textbook in the design of VLSI digital signal processors. I was awarded VHDL International Best PhD Dissertation Advisor Award in 1997 and the NSF RI Award in 1990. I was Technical Program Chair for both the IEEE MASCOTS in 1994 and the IEEE Workshop on Parallel and Distributed Simulation in 1990. In 1989 I was recognized with the Ira Kay IEEE/ACM Best Paper Award for Best Paper presented at the IEEE Annual Simulation Symposium.

10. I have submitted approximately thirty invention disclosures and provisional patents over the past ten years. None of them are patents yet.

11. My Curriculum Vitae is attached as **Exhibit A**.

12. I have been retained by counsel for Petitioner to provide my expert opinion in connection with the above-captioned proceeding as set forth herein.

B. Materials Considered

13. The analysis that I provide in this Declaration is based on my education,

research, and experience, as well as the documents I have considered. In forming my opinions, I have read and considered U.S. Patent No. 9,922,348 B2 ("'348 patent") (**EX1001**) and its prosecution history. I have cited to the following documents in my analysis below:

Exhibit No.	Description of Document
1001	U.S. Patent No. 9,922,348 B2 to David Walker Harper et al. (filed March 2, 2017, issued March 20, 2018) ("'348" or "'348 patent")
1003	Excerpts from Alan Neibauer, *How to Do Everything With Yahoo!* (2000) ("Neibauer")
1004	***Reserved***
1005	U.S. Patent No. 7,574,486 B1 to Yin Cheng et al. (filed November 8, 2000, issued August 11, 2009) ("Cheng")
1006	U.S. Patent No. 6,434,403 B1 to Michiel R. Ausems et al. (filed February 19, 1999, issued August 13, 2002) ("Ausems")
1007-1009	***Reserved***
1010	U.S. Patent No. 6,487,583 B1 to Jamey Harvey et al. (filed February 25, 2000, issued November 26, 2002) ("Harvey")
1011	U.S. Patent Application Publication No. 2001/0015759 A1 to Robert Francis Squibbs (filed February 21, 2002, published August 23, 2001) ("Squibbs")
1012	Excerpts from Uwe Hansmann et al., *Pervasive Computing Handbook* (2001) ("Hansmann")

Exhibit No.	Description of Document
1014	U.S. Patent No. 6,907,566 B1 to Charles McElfresh et al. (filed April 2, 1999, issued June 14, 2005) ("McElfresh")
1015-1017	***Reserved***
1018	Excerpts from Sean Wagstaff, *Animation on the Web* (1999) ("Wagstaff")
1019	U.S. Patent No. 6,874,146 B1 to Sridhar Iyengar (filed June 30, 1999, issued March 29, 2005) ("Iyengar")
1020	U.S. Patent No. 6,311,185 B1 to Robert E. Markowitz (filed October 30, 1997, issued October 30, 2001 ("Markowitz")
1021	Excerpts from *Microsoft Computer Dictionary* (5th ed 2002)

II. PERSON OF ORDINARY SKILL IN THE ART

14. I understand that, under the patent laws in effect before the America Invents Act ("AIA") of 2011, an assessment of claims of a patent filed before the AIA took effect should be undertaken from the perspective of a person of ordinary skill in the art as of the earliest claimed priority date (i.e., the "time the invention was made"). I have preliminarily for purposes of my Declaration only assumed that date to be June 18, 2002, the filing date of the earliest application to which the

challenged patent claims priority (provisional application no. 60/389,430).[1]

15. I have also been advised that to determine the appropriate level of a person having ordinary skill in the art, the following factors may be considered: (1) the types of problems encountered by those working in the field and prior art solutions thereto; (2) the sophistication of the technology in question, and the rapidity with which innovations occur in the field; (3) the educational level of active workers in the field; and (4) the educational level of the inventor.

16. The '348 patent is entitled "Method, Apparatus and System for Management of Information Content for Enhanced Accessibility Over Wireless Communication Networks" and states that it "relates generally to network-based communications systems, and more particularly to techniques for information content management in such systems." ('348, 1:29-31.)

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[1] I express no opinion on whether the challenged patent is actually entitled to the benefit of the provisional application to which it claims priority (60/389,430). This issue is not relevant here because all of the prior art references relied upon predate that date. In the event entitlement to the provisional filing date may later become relevant, for example based on arguments later presented by Patent Owner, I reserve my right to provide opinions on that issue at that time.

17. In my opinion, a person of ordinary skill in the art would have possessed a bachelor's degree in electrical engineering, computer science, or similar field, with two years of experience in developing and implementing network-based computer systems that interact with mobile devices, such as systems for storing and retrieving information over the Internet or communicating using the Web using wireless mobile devices. A person could also have qualified as a person of ordinary skill in the art with some combination of (1) more formal education (such as a master's of science degree) and less technical experience, or (2) less formal education and more technical or professional experience.

18. My opinions regarding the level of ordinary skill in the art are based on, among other things, my decades of experience in the field of computer science, my understanding of the basic qualifications that would be relevant to an engineer or scientist tasked with investigating methods and systems in the relevant area, and my familiarity with the backgrounds of colleagues, co-workers, and employees, both past and present.

19. Although my qualifications and experience exceed those of the hypothetical person having ordinary skill in the art defined above, my analysis and opinions regarding the challenged claims have been based on the perspective of a person of ordinary skill in the art as of June 2002.

III. STATEMENT OF LEGAL PRINCIPLES

A. Claim Construction

20. I understand that a purpose of claim construction is to determine what a person of ordinary skill in the art would have understood the claim terms to mean. Claim terms are generally given their ordinary and customary meaning, which is the meaning that the term would have to a person of ordinary skill in the art in question as of the effective filing date.

21. I understand that the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification. I understand that the patent specification, under the legal principles, has been described as the single best guide to the meaning of a claim term, and is thus highly relevant to the interpretation of claim terms. And I understand for terms that do not have a customary meaning within the art, the specification usually supplies the best context of understanding the meaning of those terms.

22. I further understand that other claims of the patent in question, both asserted and unasserted, can be valuable sources of information as to the meaning of a claim term. Because the claim terms are normally used consistently throughout the patent, the usage of a term in one claim can often illuminate the meaning of the

same term in other claims. Differences among claims can also be a useful guide in understanding the meaning of particular claim terms.

23. I understand that the prosecution history can further inform the meaning of the claim language by demonstrating how the inventors understood the invention and whether the inventors limited the invention in the course of prosecution, making the claim scope narrower than it otherwise would be. Extrinsic evidence, such as dictionaries, may also be consulted in construing the claim terms.

24. I understand that, in *Inter Partes* Review (IPR) proceedings, a claim of a patent shall be construed using the same claim construction standard that would be used to construe the claim in a civil action filed in a U.S. district court (which I understand is called the "*Phillips*" claim construction standard), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.

25. I have been instructed by counsel to apply the "*Phillips*" claim construction standard for purposes of interpreting the claims in this proceeding, to the extent they require an explicit construction. The description of the legal principles set forth above thus provides my understanding of the "*Phillips*" standard as provided to me by counsel.

26. I understand that certain terms in the challenged claims have been previously construed by the court in connection with *prior* litigation involving related patents in the same patent family, U.S. Patent Nos. 7,599,983 and 7,908,342. I understand that there is currently a dispute in the *current* pending litigation between Patent Owner and Petitioner as to whether the constructions from the prior litigation should be applied to the terms of the challenged patent. I further understand that the parties to the current pending litigation have proposed constructions of certain terms. The table below collects these terms and their respective proposed constructions:

Term	Proposed Constructions
"mobile information channel"	Petitioner: "a virtual location at the content management site at which user-authored content may be added for transmission to the mobile web site" ('983 patent prior litigation; proposed by Petitioner in current pending litigation) Patent Owner: "Plain and Ordinary meaning; no construction required. But if the Court requires construction, 'a medium for transferring information that allows mobile device users to author content'" (Proposed by Patent Owner in current pending litigation)

Term	Proposed Constructions
"mobile web site"	*(This term is not recited in the challenged claims, but is referenced in Petitioner's proposed litigation construction of "mobile information channel" above)* "a web site designed to be accessed by a mobile device" ('983 patent prior litigation)
"web site"	*(This term is not recited in the challenged claims, but is referenced in Petitioner's proposed litigation construction of "mobile information channel" above)* "a set of related web pages including text, graphics and data appearing thereon which exist on the server or servers of the web site operator" ('342 patent prior litigation)
"content management web site"	*(This term is not recited in the challenged claims, but is referenced in Petitioner's proposed litigation construction of "mobile information channel" above ("content management site"))* Petitioner: "a web site that allows a user without programming to create and manage content on a mobile web site, or a portion thereof" (based on '342 patent prior litigation, with "or a portion thereof" added)

Term	Proposed Constructions
"mobile device"	Petitioner: "any type of portable information processing device capable of being configured for communication over a network, including but not limited to a mobile telephone, a personal digital assistant (PDA), a palmtop computer, a hand-held computer, a laptop computer, a tablet computer, a global positioning system (GPS) receiver or other GPS-based navigational device, an MP3 player or other type of audio player, a pager, a watch or other timepiece, a camera, or a portable game player" (Proposed by Petitioner in current pending litigation) Patent Owner: "Plain and Ordinary meaning; no construction required. But if the Court requires construction, 'a piece of handheld equipment'" (Proposed by Patent Owner in current pending litigation)
"activate a given mobile information channel"	Petitioner: "choose a mobile information channel to be visible at the mobile web site" (Proposed by Petitioner in current pending litigation) Patent Owner: "Plain and Ordinary meaning; no construction required. But if the Court requires construction, see previous construction for 'mobile information channel.' The construction for 'activate' is 'start a sequence or process'" (Proposed by Patent Owner in current pending litigation)

Term	Proposed Constructions
"application-based information channel"	Petitioner: Same as "mobile information channel," *i.e.*, "a virtual location at the content management site at which user authored content may be added for transmission to the mobile web site" (Proposed by Petitioner in related litigation) Patent Owner: "Plain and ordinary meaning; no construction required. But if the Court requires construction, 'a computer program-based medium for transferring information." (Proposed by Patent Owner in related litigation)
"web-based shared information channel"	Petitioner: Same as "mobile information channel," *i.e.*, "a virtual location at the content management site at which user authored content may be added for transmission to the mobile web site" (Proposed by Petitioner in related litigation) Patent Owner: "Plain and ordinary meaning; no construction required. But if the Court requires construction, "a medium for transferring information accessible to more than one user via the internet.'" (Proposed by Patent Owner in related litigation)
"data feed" (claims 10-11, 15-16, 19-20)	Petitioner: "an extensible markup language (XML) or rich site summary (RSS) feed" Patent Owner: "Plain and Ordinary meaning; no construction required. But if the Court requires construction, 'provision of information.'"

27. For purposes of my analysis here, I do not believe express claim constructions are necessary for the terms of the challenged claims, because the prior

art renders the claims obvious under any of the proposed constructions identified above or any other reasonable construction. Accordingly, my analysis below discusses these proposed constructions and explains why, under each of them, the limitations are disclosed and rendered obvious by the prior art.

B. Obviousness (§ 103)

28. I understand that a patent claim is obvious if, as of the effective filing date, it would have been obvious to a person having ordinary skill in the field of the technology (the "art") to which the claimed subject matter belongs.

29. I understand that the following factors should be considered in analyzing obviousness: (1) the scope and content of the prior art; (2) the differences between the prior art and the claims; and (3) the level of ordinary skill in the pertinent art. I also understand that certain other facts known as "secondary considerations" such as commercial success, unexplained results, long felt but unsolved need, industry acclaim, simultaneous invention, copying by others, skepticism by experts in the field, and failure of others may be utilized as indicia of nonobviousness. I understand, however, that secondary considerations should be connected, or have a "nexus," with the invention claimed in the patent at issue.

30. I understand that a reference qualifies as prior art for obviousness purposes when it is analogous to the claimed invention. The test for determining

what art is analogous is: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.

31. I understand that a person of ordinary skill in the art is assumed to have knowledge of all prior art. I understand that one skilled in the art can combine various prior art references based on the teachings of those prior art references, the general knowledge present in the art, or common sense. I understand that a motivation to combine references may be implicit in the prior art, and there is no requirement that there be an actual or explicit teaching to combine two references. Thus, one may take into account the inferences and creative steps that a person of ordinary skill in the art would employ to combine the known elements in the prior art in the manner claimed by the patent at issue. I understand that one should avoid "hindsight bias" and ex post reasoning in performing an obviousness analysis. But this does not mean that a person of ordinary skill in the art for purposes of the obviousness inquiry does not have recourse to common sense.

32. I understand that when determining whether a patent claim is obvious in light of the prior art, neither the particular motivation for the patent nor the stated purpose of the patentee is controlling. The primary inquiry has to do with the

objective reach of the claims, and that if those claims extend to something that is obvious, then the entire patent claim is invalid.

33. I understand one way that a patent can be found obvious is if there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent's claims. I understand that a motivation to combine various prior art references to solve a particular problem may come from a variety of sources, including market demand or scientific literature. I understand that a need or problem known in the field at the time of the invention can also provide a reason to combine prior art references and render a patent claim invalid for obviousness. I understand that familiar items may have obvious uses beyond their primary purpose, and that a person of ordinary skill in the art will be able to fit the teachings of multiple prior art references together like the pieces of a puzzle. I understand that a person of ordinary skill is also a person of at least ordinary creativity. I understand when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this finite number of predictable solutions leads to the anticipated success, I understand that the invention is likely the product of ordinary skill and common sense, and not of any sort of innovation. I understand that the fact that a

combination was obvious to try might also show that it was obvious, and hence invalid, under the patent laws. I understand that if a patent claims a combination of familiar elements according to known methods, the combination is likely to be obvious when it does not more than yield predictable results. Thus, if a person of ordinary skill in the art can implement a predictable variation, an invention is likely obvious. I understand that combining embodiments disclosed near each other in a prior art reference would not ordinarily require a leap of inventiveness.

34. I understand that obviousness may be shown by demonstrating that it would have been obvious to modify what is taught in a single piece of prior art to create the patented invention. Obviousness may also be shown by demonstrating that it would have been obvious to combine the teachings of more than one item of prior art. I understand that a claimed invention may be obvious if some teaching, suggestion, or motivation exists that would have led a person of ordinary skill in the art to combine the invalidating references. I also understand that this suggestion or motivation may come from the knowledge of a person having ordinary skill in the art, or from sources such as explicit statements in the prior art. I understand that when there is a design need or market pressure, and there are a finite number of predictable solutions, a person of ordinary skill may be motivated to apply common sense and his skill to combine the known options in order to solve the problem.

35. I understand the following are examples of approaches and rationales that may be considered in determining whether a piece of prior art could have been combined with other prior art or with other information within the knowledge of a person having ordinary skill in the art:

(1) Some teaching, motivation, or suggestion in the prior art that would have led a person of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention;

(2) Known work in one field of endeavor may prompt variations of it for use in the same field or a different field based on design incentives or other market forces if the variations would have been predictable to a person of ordinary skill in the art;

(3) Combining prior art elements according to known methods to yield predictable results;

(4) Applying a known technique to a known device, method, or product ready for improvement to yield predictable results;

(5) Applying a technique or approach that would have been "obvious to try" (choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success);

(6) Simple substitution of one known element for another to obtain predictable results; or

(7) Use of a known technique to improve similar products, devices, or methods in the same way.

36. I understand that, when determining whether a claimed combination is obvious, the correct analysis is not whether one of ordinary skill in the art, writing on a blank slate, would have chosen the particular combination of elements described in the claim. Instead, I understand the correct analysis considers whether one of ordinary skill, facing the wide range of needs created by developments in the field of endeavor, would have seen a benefit to selecting the combination claimed.

37. I understand that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference. The test for obviousness, in other words, is not whether the references could be physically combined but whether the claimed inventions are rendered obvious by the teachings of the prior art as a whole.

IV. THE '348 PATENT

A. Overview of the Specification

38. The '348 patent is entitled "Method, Apparatus and System for Management of Information Content for Enhanced Accessibility Over Wireless

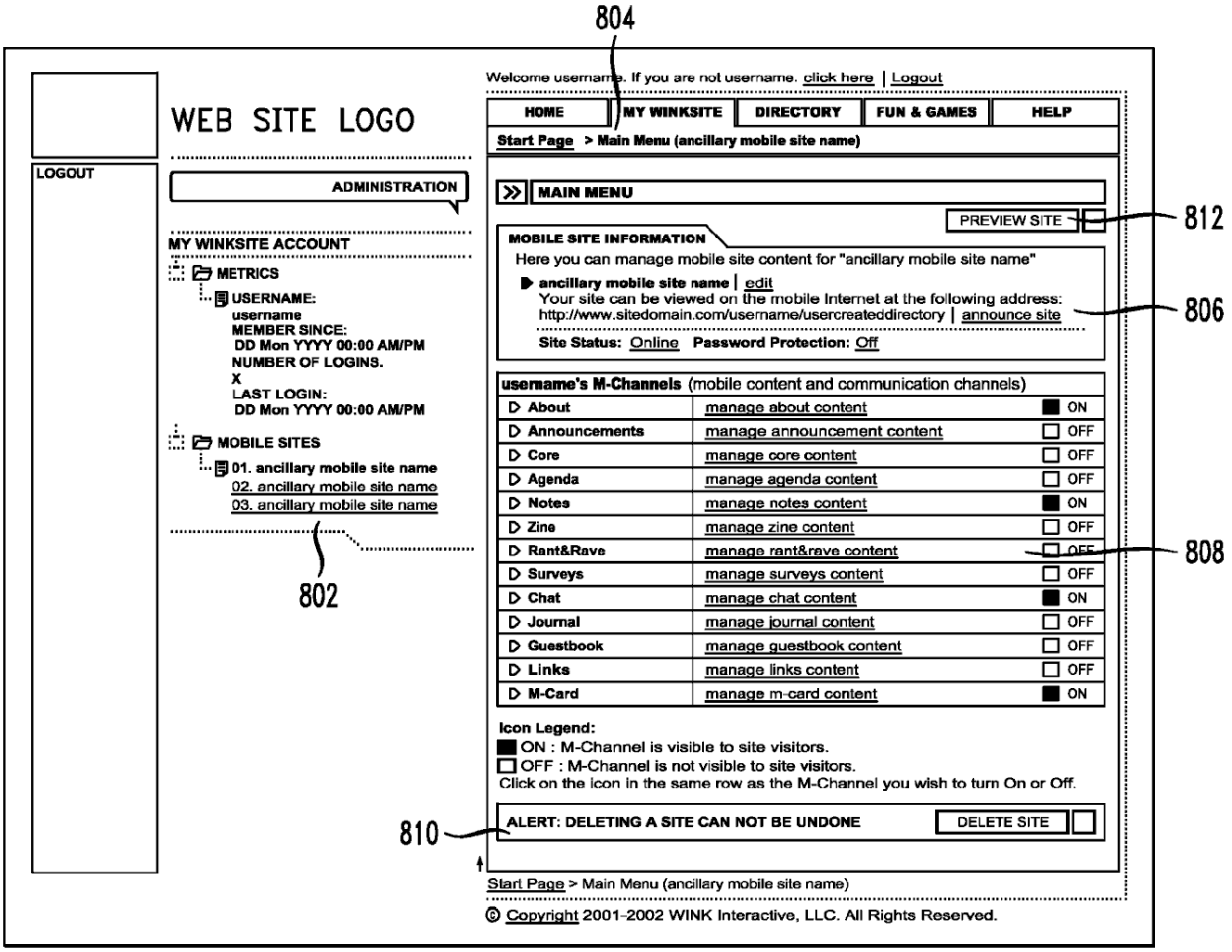
Communication Networks" and states that it "relates generally to network-based communications systems, and more particularly to techniques for information content management in such systems." ('348, 1:29-31.) The Background of the Invention admits that "[o]ne of the most rapidly expanding aspects of wireless networking involves the accessing of information content over wireless networks via web-enabled mobile devices. Examples of such devices include mobile telephones, personal digital assistants (PDAs), palmtop computers, etc." ('348, 1:35-39.)

39. The patent also concedes that, "[a]s is well-known, these and other web-enabled devices not only provide access to the Internet, but can also be used to support other types of wireless networking functionality, such as messaging, distributed collaboration, and location-based services." ('348, 1:39-44.) The patent complains that conventional techniques did not adequately facilitate creation, publishing, distribution, or managing of information on mobile devices. ('348, 1:45-58.) "By way of example, conventional techniques such as web site authoring tools and web logging ('blogging') are not optimized for use in the generation of information for shared access via mobile devices." ('348, 1:54-58.)

40. In one embodiment, the patent describes a technique in which a user, through a website referred to in the patent as a ***content management*** website, can activate mobile information channels (or M-channels) for a ***mobile*** website. "The

content management site permits the user to enter information in accordance with a specified format comprising a plurality of selectable mobile information channels each corresponding to an information category. The mobile information channels are also referred to as 'M-channels' herein…." ('348, 5:34-40.) Figure 8 shows an exemplary page of a content management website that can be used to activate mobile information channels for a mobile website:

FIG. 8



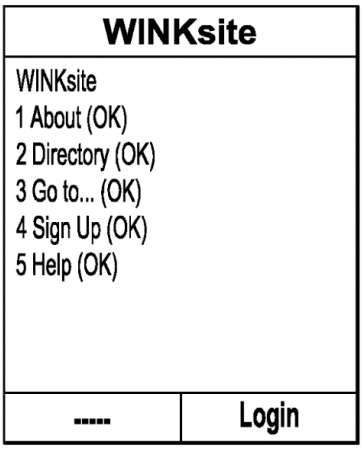
('348, Fig. 8.) "FIG. 8 shows an example of a main menu page of the content

management site for managing a given mobile site associated with a system user." ('348, 14:1-3.) Figure 8, as shown, includes mobile website information **806** and M-channel information **808** making mobile information channels visible on the mobile website. ('348, Fig. 8, 14:1-16.)

41. These M-channels are "utilized at the content management site… to facilitate the generation of mobile sites and the management of associated content." ('348, 8:27-30.) Mobile information channels thus "allow unsophisticated users to easily and efficiently author message data or other types of information content to be made accessible via a collaborative workspace, a data mailbox, a collaborative community, or other type of mobile site or portion thereof generated or otherwise managed in the system **10**." ('348, 8:30-36.) The patent provides a lengthy list of examples of mobile information channels including chat, events, guest book, discussion forums, and "numerous other information categories may be represented by mobile information channels at the content management site in accordance with the invention." ('348, 8:46-60.)

42. Information and selections provided by the user through the content management website "is processed to generate a mobile web site comprising information content that is accessible via one or more of the mobile devices **15** over the wireless network **12** of the system **10**." ('348, 5:40-43.) An example screen display from a mobile website is shown in Figure 24a (at right). ('348, 3:41-43, 15:30-33.) The mobile website may be accessed by a browser on the mobile device via a URL for the mobile website. ('348, 13:21-24 ("The mobile site home page **400** may be accessed, for example, by entering a corresponding URL of the mobile site into a browser at one of the mobile devices **15**.").)

FIG. 24a



43. In one embodiment, a mobile device for use with the alleged invention may be "a web-enabled mobile phone," but the patent "does not require use of any particular type or configuration of mobile device." ('348, 15:21-25.) The patent defines "mobile device" as including "any type of portable information processing device capable of being configured for communication over a network," including handheld computers, laptop computers, among many other examples. ('348, 4:45-55.) I will discuss additional aspects of the patent specification in my analysis of the claims below.

B. The Challenged Claims

44. This Declaration addresses claims 1-20 the '348 patent. Independent claim 1 is representative and recites:

1. An apparatus comprising:

[a] a processing element comprising a processor coupled to a memory; and

[b] a network interface coupled to the processing element configured to communicate with a plurality of mobile devices over at least one network;

[c] the processing element being configured:

[c][1] to receive first device-captured data from a first one of the mobile devices via the network interface;

[c][2] to receive second device-captured data from a second one of the mobile devices via the network interface;

[c][3] to integrate the first and second device-captured data into a web-based shared information channel controllably accessible to first and second users of the respective first and second mobile devices via respective personalized content applications of the first and second mobile devices.

('348, 19:27-44 (Claim 1; bracketed notations (*e.g.*, **[a]**) added).)

45. I address the claims further in my detailed analysis in **Part V** below.

V. APPLICATION OF THE PRIOR ART TO CHALLENGED CLAIMS

46. I have reviewed and analyzed the prior art references and materials listed in **Part I.B** above. In my opinion the challenged claims of the challenged patent would have been obvious to a person of ordinary skill in the art based on the following combinations of the prior art.

Ground	Claims	Basis for Challenge Under § 103
1	1-3, 6-9, 12-14, 17-18	Neibauer (**EX1003**), Cheng (**EX1005**), Ausems (**EX1006**)
2	4-5	Ground 1 Prior Art + Squibbs (**EX1011**)
3	10-11, 15-16, 19-20	Ground 1 Prior Art + McElfresh (**EX1014**)
4	1-3, 6-9, 12-14, 17-18	**Ground 1** Prior Art + Harvey (**EX1010**)
5	4-5	**Ground 2** Prior Art + Harvey
6	10-11, 15-16, 19-20	**Ground 3** Prior Art + Harvey

47. **Grounds 4-6** are substantially similar to **Grounds 1-3**, except that they add Harvey (**EX1010**) to account for Petitioner's narrower construction of "**web-based shared information channel**" in the pending litigation, to the extent that construction were adopted here. I am informed by counsel that each of the references listed above qualifies as prior art to the challenged claims because each reference

was filed and/or published before the earliest priority date for the challenged claims (June 18, 2002).

A. Brief Summary of Prior Art

1. References Common to All Grounds

(a) Neibauer (EX1003)

48. **Neibauer** is a book entitled *How to Do Everything With Yahoo!* I am informed that Neibauer qualifies as prior art because it was published before the earliest priority date applicable to the challenged claims.

49. As its title indicates, Neibauer describes various features of Yahoo!, which was one of the most popular online services on the Internet during the 1990s and early 2000s. Neibauer explains that "Yahoo! is your portal to the best of everything that the Internet has to offer." (Neibauer, p.4.) Yahoo! gained widespread notoriety in the 1990s for having provided one of the first Internet and Web search engines, but later expanded its offerings to provide additional features including (among others) email, shopping, news, weather, sports, among other services. (Neibauer, pp.10-11, 13-17.)

50. One of the features of Yahoo! described in Neibauer was called **Yahoo! Clubs**, which provided a way for users to create online communities to share information. As Neibauer explains, "[a] *club* is a group of Yahoo! members who

share a common interest. Each club has its own message board, chat room, as well as places to share photographs, news, addresses, and links." (Neubauer, p.473 (italics in original).) Clubs were accessible from a webpage on the Yahoo! website (http://clubs.yahoo.com), that allowed users to search existing clubs relating to particular topics of interest. (Neibauer, p.473.) Figure 21-7, for example, shows a screenshot showing Yahoo! clubs relating to the James Bond series:

Clubs for *James Bond Series* *(83)* **Most Popular** A-Z Index New Clubs

Rank	Club Name	Description	Members
1.	Dr No	"No, Mr Bond, I expect you to die!"	180
2.	The Official James Bond 007 Club	James Bond IS official!	117
3.	The James Bond Movie Series	The James Bond place to talk about the movies.	114
4.	The Club of James Bond	The Ultimate Top Secret Dossier of James Bond Fans	94
5.	Bond Girls	A site with over 120 Bond Girl pictures ! NOT PORN!	74
6.	The James Bond 007 Club		70
7.	James Bond Heaven	A great place to hangout for Bond nuts!	37
8.	World Of Bond	Discuss James Bond Movies, Games & Music!	34
9.	British Intelligence HQ	Where international espionage is a daily event	26
10.	The World Of James Bond	Absolutely James Bond	25
11.	James bond 007 2	if you like James bond your like this.	24
11.	James Bond's Secret Service	Shaken, Not Stirred	24

FIGURE 21-7 Club listings

(Neibauer, p.474, Fig. 21-7.) Neibauer explains that, to visit a club of interest, the user simply clicks the hyperlink for the club. (Neibauer, p.473.) For example, clicking on the third link above (for "**The James Bond Movie Series**") shows the club page shown in Figure 21-8:

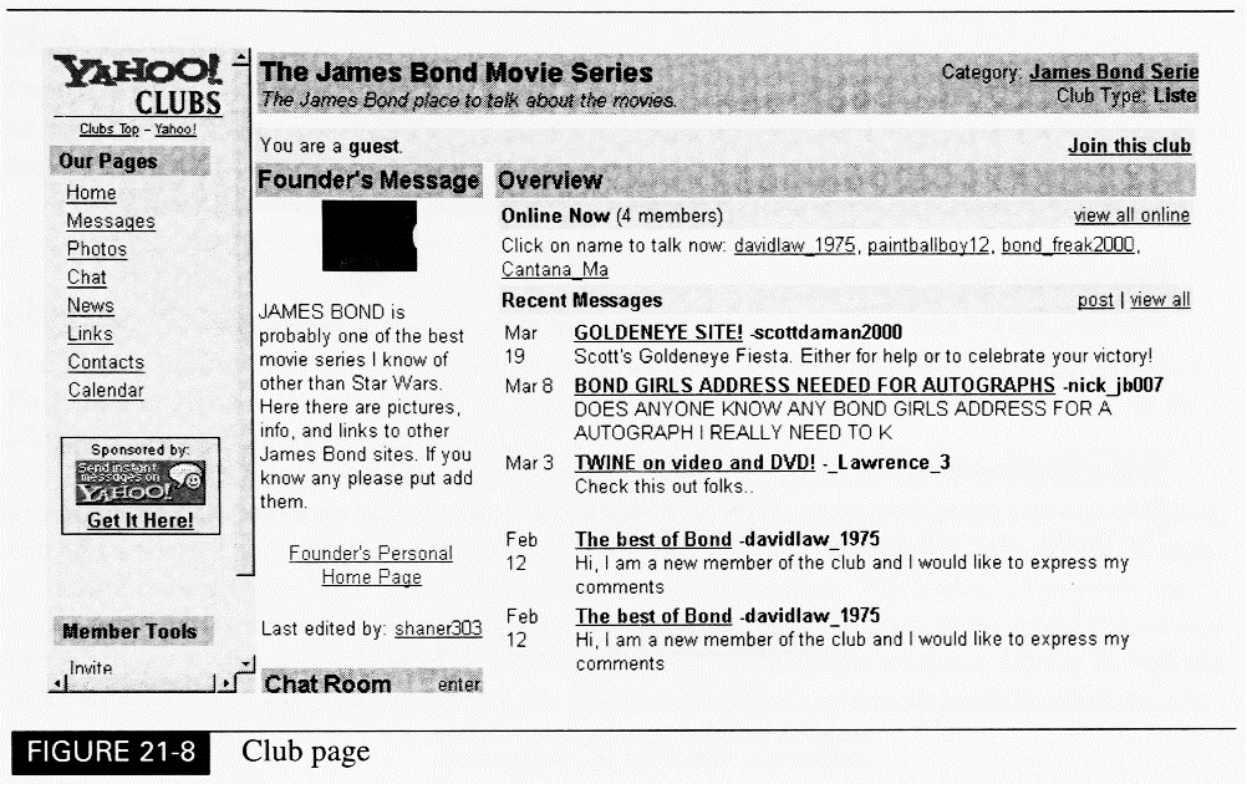


FIGURE 21-8 Club page

(Neibauer, p.475, Fig. 21-8.) The user can join this club by clicking "**Join this club**," shown on the top-right above. (Neibauer, p.475.) After joining, "other members will see your name on the top of the page with the list of members who are online." (*Id.*)

51. Each club offers a number of features, accessible from the links shown under "**Our Pages**" on the left side of Figure 21-8 above. For example, each club has its own private message board ("**Messages**"), allows users to share photographs and make photo albums ("**Photos**"), engage in private chat with club members ("**Chat**"), view news headlines ("**News**"), share website links with other club members ("**Links**"), obtain contact information about club members ("**Contacts**"),

and post and view events of interest to club members ("**Calendar**"). (Neibauer, pp.477-480.)

52. Yahoo! members could also create their own clubs. (Neibauer, pp.480-82.) For example, a member can select a category and then click "**Create Club**" to cause a form to appear asking for information about the new club. (Neibauer, p.481.) Figure 21-12 shows an exemplary web form for creating a new Yahoo! Club:

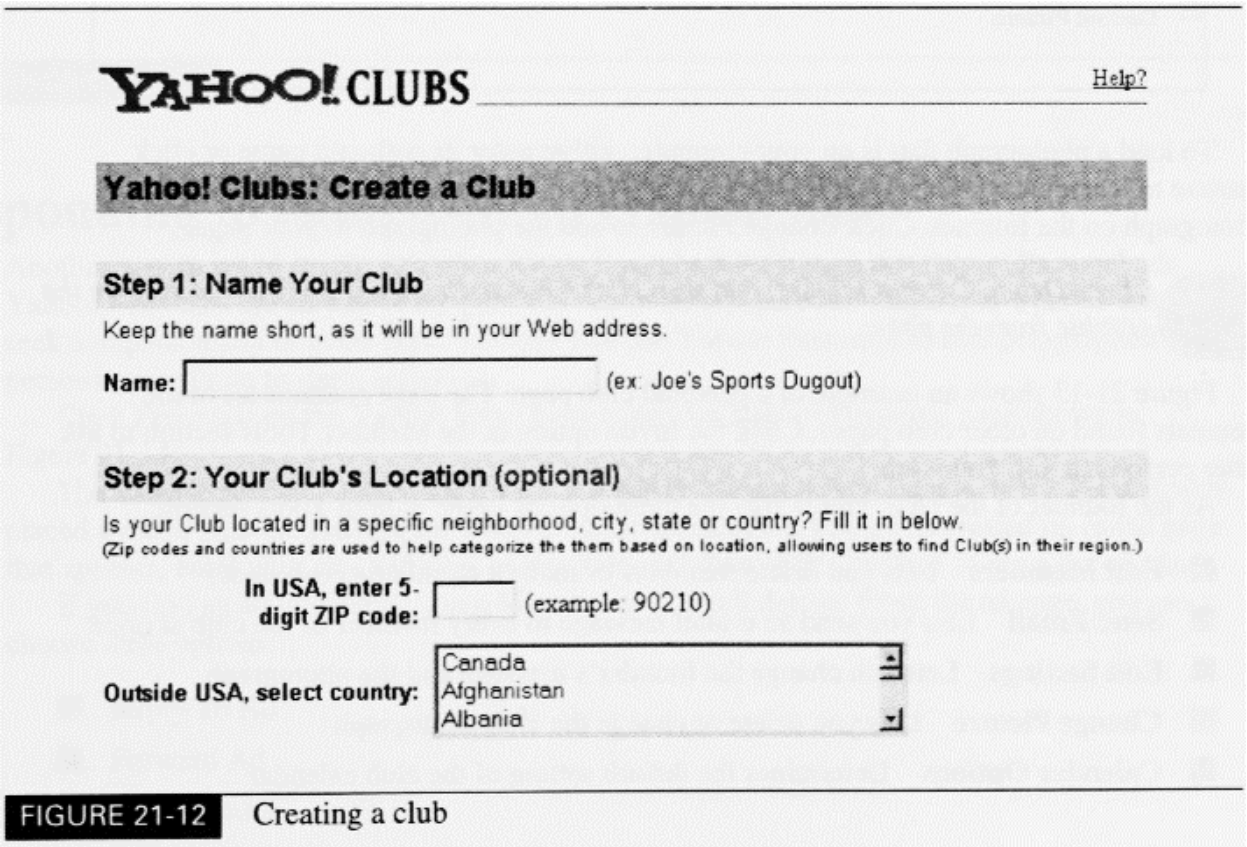


FIGURE 21-12 Creating a club

(Neibauer, p.481, Fig. 21-12.) As shown, a club founder can specify a name for the new club, and optional zip code or country information. (Neibauer, p.481, ¶¶3-5.)

53. The founder can also select whether the new club will be either "listed"

or "unlisted." (Neibauer, p.482, ¶6.) "A listed club is one that is open to all Yahoo! members." (Neibauer, p.473.) The exemplary James Bond Series club, shown in Figure 21-8 above, is a listed club. (Neubauer, p.475, Fig. 21-8 (top right: "Club type: Liste[d]").) An unlisted club, on the other hand, "is private. Only Yahoo! members who were invited to join may join the club and be able to access it." (Neibauer, p.473; *see also id.*, p.475 ("You must be invited to join an unlisted club.").) "An unlisted club is ideal for sharing private information with family members or business associates." (Neibauer, p.473.)

54. The club founder can also specify additional content that will appear in the club page, such as a brief textual description that will appear under the club name on the club page, a short founder's message, a web address for the founder's personal home page, and a club picture. (Neibauer, p.482, ¶¶1-3.) For the club picture, the founder can either select a photo from their own computer, or include a link to a location of the photograph on the web. (Neibauer, p.482.) An exemplary "unlisted" club created using these techniques is shown in Figure 21-13:

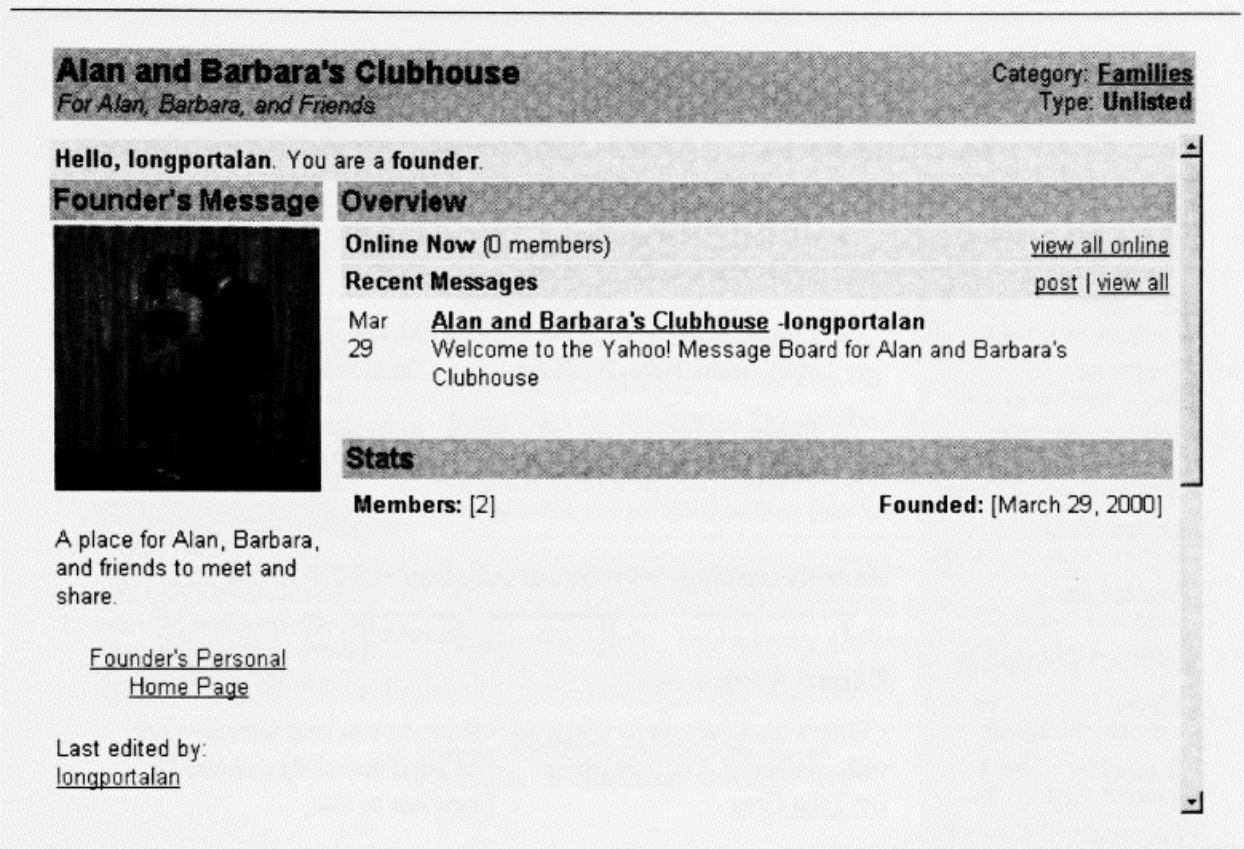


FIGURE 21-13 A Personal club

(Neibauer, p.483, Fig. 21-13.) "Figure 21-13 shows an example of a personal club page. The page contains all of the elements found on other club pages. Click the Invite option in the Member Tools section to ask other persons to join your club." (Neibauer, p.482.)

55. Neibauer discloses several ways in which a club founder can manage the content of the club. "As the club founder, you can invite others to join, delete members, control the contents of photo albums, and customize the photo and messages on the club's home page." (Neibauer, p.480.)

56. Neibauer also discloses services known as Yahoo! Mobile and Yahoo! To Go that enabled content from Yahoo! services to be provided to mobile devices such as pagers, cell phones, web phones, and personal digital assistants (PDAs). (Neibauer, pp.166-174.) "Yahoo! To Go lets you receive Yahoo! information on your mobile device." (Neibauer, p.167.) "The Yahoo! To Go option lets you set up your mobile device and Yahoo! so that they work together, as well as specify the content that will be sent to your device." (*Id.*) For example, one option referred to as "Yahoo! On Your PDA" allowed users of browser-enabled PDAs, such as Palm, Windows CE and smartphone devices, to select particular types of Yahoo! content accessible from their PDA. (Neibauer, pp.171-174.)[2]

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[2] The term PDA, an initialism for **p**ersonal **d**igital **a**ssistant, was commonly used in the 1990s and early 2000s to refer to a handheld mobile device such as handheld personal computer, tablet, or smartphone that typically provided a touchscreen display or input device, and offered communications capabilities either through a wired telephone connection or a wireless modem. By the late 1990s, popular examples of PDAs included the "Palm Pilot" line of handheld devices sold by Palm Computing, Inc., and handheld computing devices designed to run Microsoft

57. I will provide more detail about Neibauer in my discussion of the claim limitations below.

(b) Cheng (EX1005)

58. **Cheng**, U.S. Patent No. 7,574,486 B1, is entitled "Web Page Content Translator." I am informed that Cheng qualifies as prior art because it is a United States patent that issued from an application filed on November 8, 2000, which is before the earliest priority date of the challenged claims.

59. My Declaration cites Cheng in combination with Neibauer for certain features of the challenged claims that require mobile functionality. Cheng discloses a technique for translating the pages of existing (non-mobile) websites into a format suitable for display on a mobile device. (Cheng, Abstract ("A system, method, and computer readable medium for reformatting web content into a format readable on one or more mobile devices is provided.").) Cheng explains that "[b]ecause of the

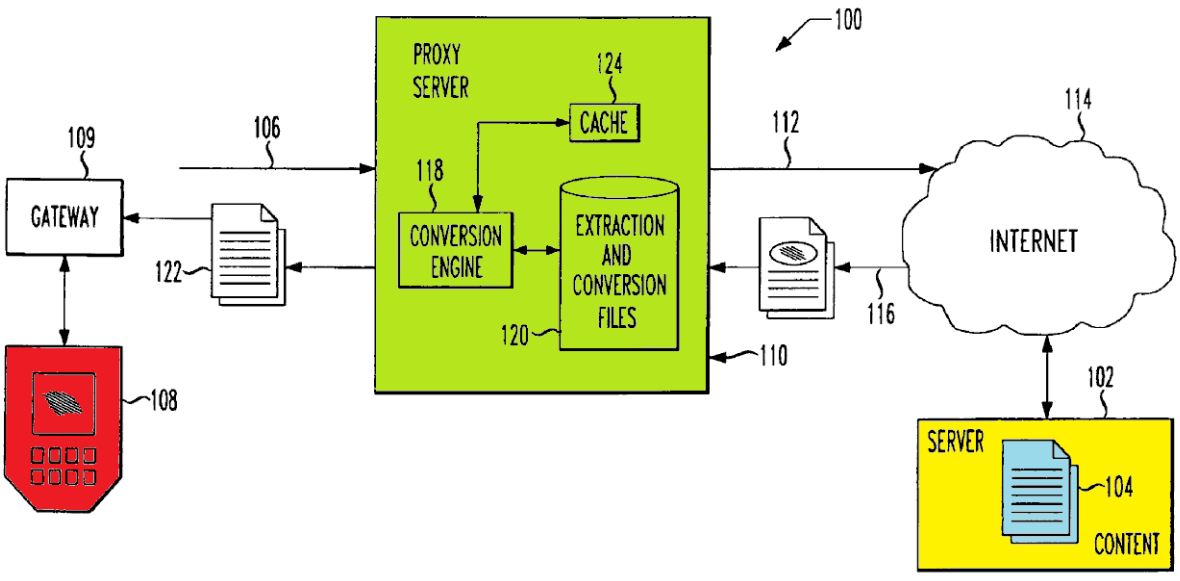
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Windows CE, a version of the popular Windows operating system optimized for smaller mobile devices. By the mid-2000s, with the widespread adoption and use of modern smartphones with touchscreen displays that incorporated many of the characteristics of earlier PDAs (as exemplified by the Apple iPhone introduced in 2007), the term "PDA" became less frequently used.

explosion of mobile enterprise solutions, users of wireless devices now demand that businesses deliver web content for viewing on desktop, or mobile/portable (e.g., handheld) devices." (Cheng, 1:19-22.) Cheng explains that, in many situations, this "generally required organizations to develop and maintain multiple sets of content, one for viewing in a desktop environment, and others for viewing on each individual type of mobile device." (Cheng, 1:28-32.)

60. Cheng attempts to address this issue by disclosing a system and method for dynamically reformatting or converting existing web content into a format suitable for a mobile device. (Cheng, *e.g.*, 2:19-32, 3:21-26.) Figure 1 illustrates an architecture **100** of one embodiment of the system and method of Cheng:

FIG. 1



(Cheng, Fig. 1 (color annotation added).)

61. The right side of Figure 1 above shows an origin web server **102** that contains original web page **104**. (Cheng, 3:36-37 ("In this context, an origin web server **102** is a web server that contains the original web page **104**.").) Web page **104** "is typically an HTML file with references to any component .wav, .mov, and/or Joint Photographic Experts Group (JPEG) files, which together comprise the web page **104**." (Cheng, 4:10-13.) "It is envisioned that each instance of web content **104** each have associated therewith a URL." (Cheng, 3:56-57.) An ordinarily skilled artisan would have recognized that web page **104** in Cheng could have been represented by any web page in HTML format reachable via the Internet.

62. The left side of Figure 1 shows mobile device **108** connected to proxy server **110**, optionally through gateway **109**. (Cheng, 3:33-36.) "Mobile devices **108** generally come in a variety of different sizes and have a variety of different screen interfaces… [T]he present invention provides the ability to uniquely tailor web page **104** content for specific mobile devices **108**." (Cheng, 5:11-15.) Cheng explains that, in one example, mobile device **108** could be a mobile device with a Palm operating system that includes a web browser. (Cheng, 5:17-23, 2:8-15.)

63. The middle of Figure 1 shows proxy server **110**, which is a key feature of Cheng. The term "proxy server" refers to a well-established and common technique for facilitating communication and/or interoperability between devices,

and this concept was in widespread use long before Cheng. Proxy servers typically sit between one or more client and one or more server computers, and intercept and filter communications between them for a variety of purposes. For example, proxy servers were commonly used for security purposes to intercept and prevent unauthorized communications from or to client devices, and for format or content conversion purposes (commonly referred to as "transcoding"). (*See* Uwe Hansmann et al., *Pervasive Computing Handbook* (2001) (**EX1012**), p.35 ("A proxy server at AvantGo.com modifies the Web pages in a way that they can be displayed on Palm devices."), p.320, §14.3 ("Transcoding is a content adaptation technology, which tailors information for a specific device by transforming its format and representation."), p.321 ("Transcoding is typically done by a gateway or proxy, which intercepts the data exchange between the content server providing multimedia data and the client rendering the received information.").)

64. Cheng discloses a format conversion proxy server that translates web pages and requests between mobile device **108** and proxy server **110**. As Cheng explains and consistent with known proxy server techniques, proxy server **110** "'sits' between the clients (e.g., the mobile device(s) **108**) and the origin web server(s) **102** that provide Web content **104**." (Cheng, 3:31-33.) Proxy server **110** "obtains the code (e.g., HTML) of the user requested web page **104**, and modifies it at the proxy

server **110** (once obtained)," which can include "reformatting and/or converting an entire web site or request specific Web content that is needed from the origin web server **102**." (Cheng, 3:41-48.) Proxy server **110** can store a device profile for mobile device **108** based on the type of mobile device and its web browser. (Cheng, 5:20-23 ("To create a device profile, both the specific version of a mobile device **108** and its web browser (e.g., a Palm V with browser A, etc.) are needed.").)

65. The operation of proxy server **110** is generally straightforward. As shown in Figure 1, mobile device **108** issues a request **106** for an original web page **104** using standard HyperText Transport Protocol (HTTP), as was well-known in the art, with the request **106** being received by proxy server **110**. (Cheng, Fig. 1, 2:19-21, 3:58-67, 7:65-8:2.) "Upon determining that the requested page **104** resides at the server **102**, the proxy server **110** makes a request **112** for the page. As shown, the proxy server **110** and the server **102** are connected via a network **114** such as the Internet." (Cheng, 3:65-4:2; *see also id.*, 2:21-24.) Proxy server **110** then converts and/or reformats original web page **104** into reformatted web page **122** (shown in Figure 1), which is transmitted to mobile device **108**. (Cheng, *e.g.*, 2:24-29, 5:46-49, 4:56-60.) "The designated HTML content of the retrieved web page **104** is extracted, subsequently and/or converted, and transmitted as a reformatted web page **122** to the mobile device **108**." (Cheng, 5:46-49; *see also id.*, 3:22-26 ("Referring

now to FIG. 1, it is envisioned that a proxy server **110** reformats/converts web content **104** on an origin web server **102** into a format **122** readable on any mobile device **108** (which can be any number of different mobile device types).").) Cheng explains that, by using the disclosed proxy server conversion method:

> Embodiments of the present invention contemplate that web-based content can be created one time, whereafter at least a portion thereof is extracted, reformatted, and transmitted to, for example, one or more handheld device browsers (e.g., the Palm Web Clipping Browser from Palm, Inc., Santa Clara, Calif., Pocket Internet Explorer from Microsoft Corp, Redmond, Wash., and Wireless Access Protocol (WAP) on smart phones, etc.). This create-once, deliver-everywhere approach eliminates the need to build and maintain separate web pages for different devices and browsers, as well as the need to install proprietary browser software on the handheld device(s).

(Cheng, 2:8-19.)

66. I will provide more information about Cheng in my discussion of the claim limitations below.

(c) Ausems (EX1006)

67. **Ausems**, U.S. Patent No. 6,434,403 B1, is entitled "Personal Digital Assistant with Wireless Telephone." I am informed that Ausems qualifies as prior art because it is a United States patent that issued from an application filed on

February 19, 1999, before the earliest priority date of the challenged claims.

68. My Declaration cites Ausems primarily for the requirement of claim 1 that the content item of comprises "**device-captured data**." As I explain below, Neibauer discloses the ability of the club founder to share digital photographs, and it would have been obvious that these photos could have been captured by a mobile device, such as image data obtained from a digital camera of the club founder. This is because, as I explain below, digital cameras were commonplace by June 2002, so it would have been obvious that shared image content uploaded to a Yahoo! club, under the proposed combination, could have been obtained from a device-captured data source of the club founder. In the event Patent Owner argues that use of digital cameras was somehow not well-known as of June 2002 or obvious based on the general knowledge of a skilled artisan, **Ground 1** further cites Ausems to show an example of a mobile communications device that, among other things, incorporated a digital camera for recording, storing, and transmitting digital images.

69. The Background of Ausems explains, as was well-known in the art, that "[t]he popularity and use of Personal Digital Assistants (PDAs) and wireless telephones has increased in recent years. A PDA or hand-held computer is primarily a lightweight, compact productivity and communications tool that can typically be held in one hand, leaving the other free to input data with a pen type stylus or a

reduced size keyboard. A PDA provides computing and information storage and retrieval capabilities for personal or business use." (Ausems, 1:12-19.) Ausems further explains that "[i]ncreasingly, wireless telephones are being combined with PDAs in order to perform more advanced functions, such as transmitting, receiving and displaying text messages." (Ausems, 1:27-30.)

70. Ausems discloses a portable mobile device that combines the functionality of a PDA with a wireless telephone. (Ausems, 3:5-8.) This PDA telephone device **100** includes, among other things, a touchscreen display. (Ausems, *e.g.*, 1:57-58, 4:30-39, 6:9-14.) The device also includes a camera for recording and storing images, which can be transmitted. (Ausems, *e.g.*, 2:5-6, 5:17-18 ("Camera **190** records video images and stores them within. Additionally, video images recorded by camera **190** may also be transmitted from PDA telephone **100** in real time during a telephone call (thus allowing for video conferencing).").)

71. I will provide more information about Ausems in my discussion of the claim limitations below.

2. Additional References for Other Grounds

(a) Squibbs (EX1011)

72. **Squibbs**, U.S. Patent Application Publication No. 2001/0015759 A1, is entitled "Location-Informed Camera." I am informed that Squibbs qualifies as

prior art because it is a United States patent application filed on February 21, 2001 and published on August 23, 2001, both dates being before the earliest priority date of the challenged claims.

73. My Declaration cites Squibbs for limitations in dependent claims 4-5 relating to obtaining location-information for a mobile device. Squibbs describes a technique of recording and displaying data (such as photos) along with the location where the photo was taken. (Squibbs, Abstract.) Squibbs explains that digital cameras that included Global Positioning System (GPS) receivers were known in the art, as were systems that could display the location where the photo was taken on an electronic map. (Squibbs, ¶¶0003-0004.)

74. Squibbs discloses a photo album system that allows a user to record digital images, which can be associated with the geographic location where they were taken. An overview of the system is shown in Figure 3:

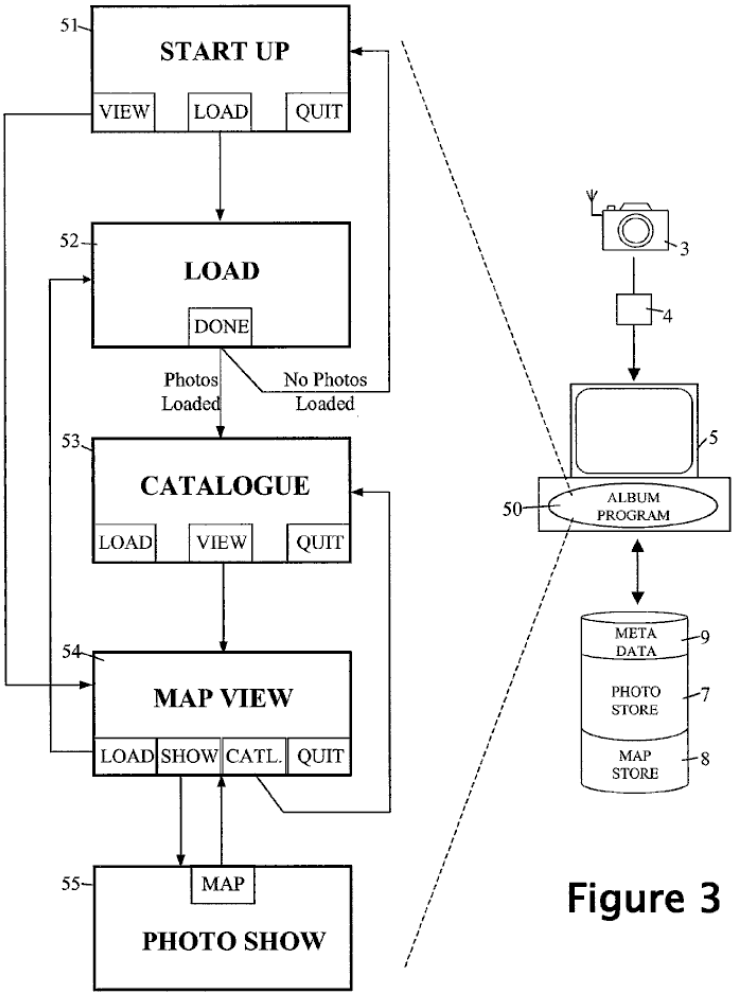


Figure 3

(Squibbs, Fig. 3.) As further explained in Squibbs, with reference to Figure 3:

> FIG. 3 depicts a photo system in which a digital camera **3** provided with location determining means (such as a GPS receiver) is used to generate digital photos **4**, each photo (also referred to as 'image data') **4** being stamped with location data indicating where the photo was taken. Other data may also be associated with each photo, such as a timestamp, a camera ID, and a user ID; such associated data (including the location data) is herein referred to as photo meta data. The photos and their meta data are downloaded by any suitable means (USB connection,

> removable storage device, etc) into a PC **5** where an album program **50** serves to store the photos in a photo store **7** and the photo meta data in a meta-data database **9** (each photo and its meta data being linked by a suitable key associated with both). The album program also has access to a map store **8**. The stores **7** and **8** and the meta-data database can be on the PC or external.

(Squibbs, ¶0031.)

75. Squibbs also discloses an album program **50** as shown in Figure 3 that allows the user to "catalogue, manage, and view their photos through a map-based interface, the photos being represented on a displayed may by a marked indicating the location where they were taken." (Squibbs, ¶0032.) The album program as shown in Figure 3 comprises "five main operating modes **51** to **55**," as shown. (Squibbs, ¶0033.) For example, Load Mode **52** allows the user to download data from camera **3**, and Catalog Mode **53** allows the user to manage newly loaded photos using a map based display, and Map View Mode **54** allows the use to browse the photo album and select photos for viewing. (Squibbs, ¶¶0033, 0035-0036.)

76. Figure 6 shows a display generated by the album program in Catalog Mode **53** (Squibbs, ¶0064):

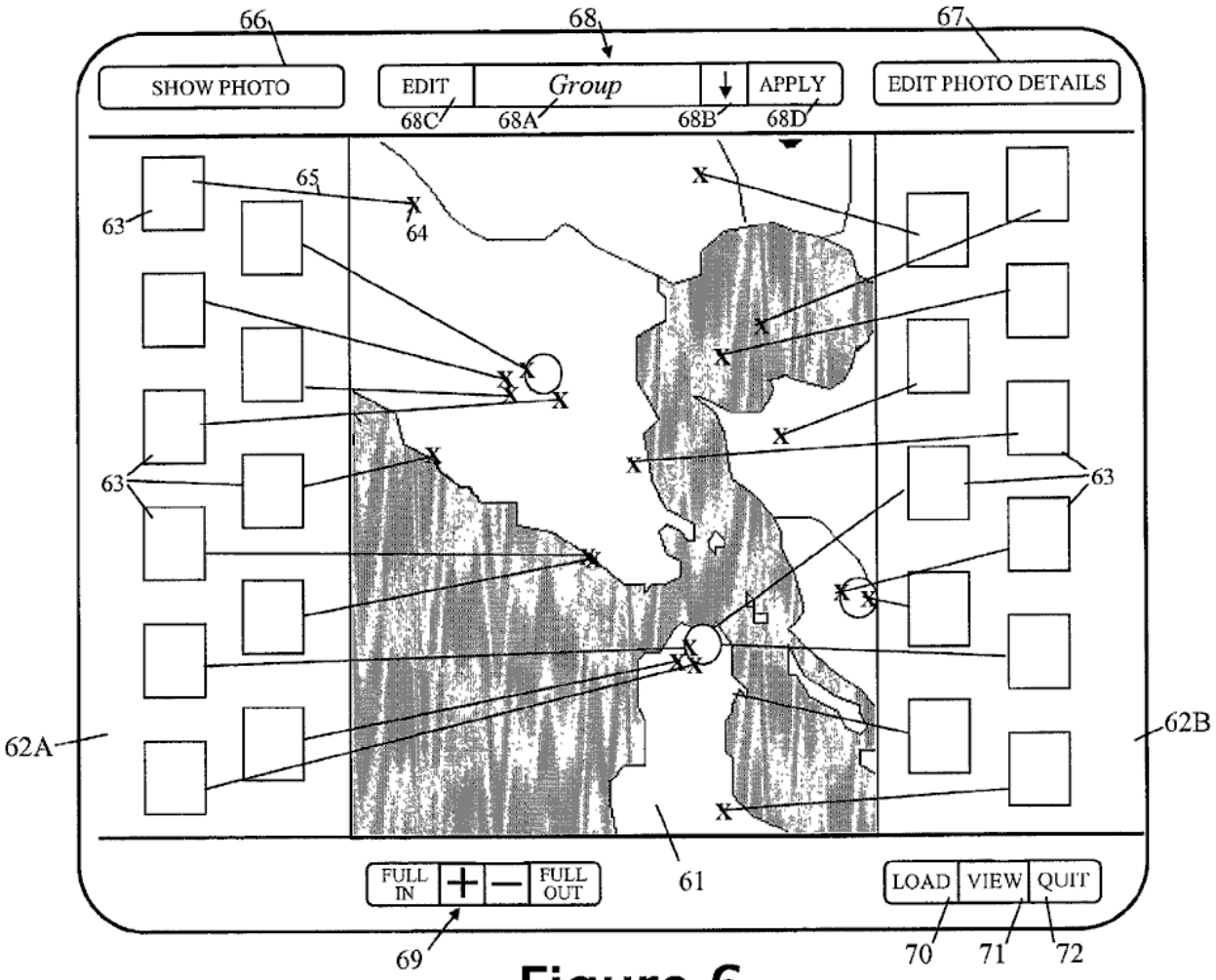


Figure 6

(Squibbs, Fig. 6.)

77. Figure 6 shows a central map area 61 which "is sufficient to encompass the locations registered for the newly loaded batch of photos." (Squibbs, ¶0064.) "A thumbnail **63** of each new photo is shown in one or other of the margin areas **62**A, B and a lead line **65** connects each thumbnail **63** to a corresponding marker 64 showing on the map the location where the photo was taken." (Squibbs, ¶0064.) Figure 6 also shows an upper control bar with, from left-to-right, Show Photo

Control **66** for displaying the photo corresponding to a selected thumbnail **63**, Group Control **68** for creating groups and assigning a photo to one or more groups, and Edit Photo Details Control **67** for displaying and editing the details of a selected thumbnail. (Squibbs, ¶¶0065-0068.) Figure 6 also "includes a zoom control **69** that enables a user to zoom in or out around a particular point on the displayed map." (Squibbs, ¶0071.)

78. Figure 7 shows a display generated by the album program in Map View **54** (Squibbs, ¶0074):

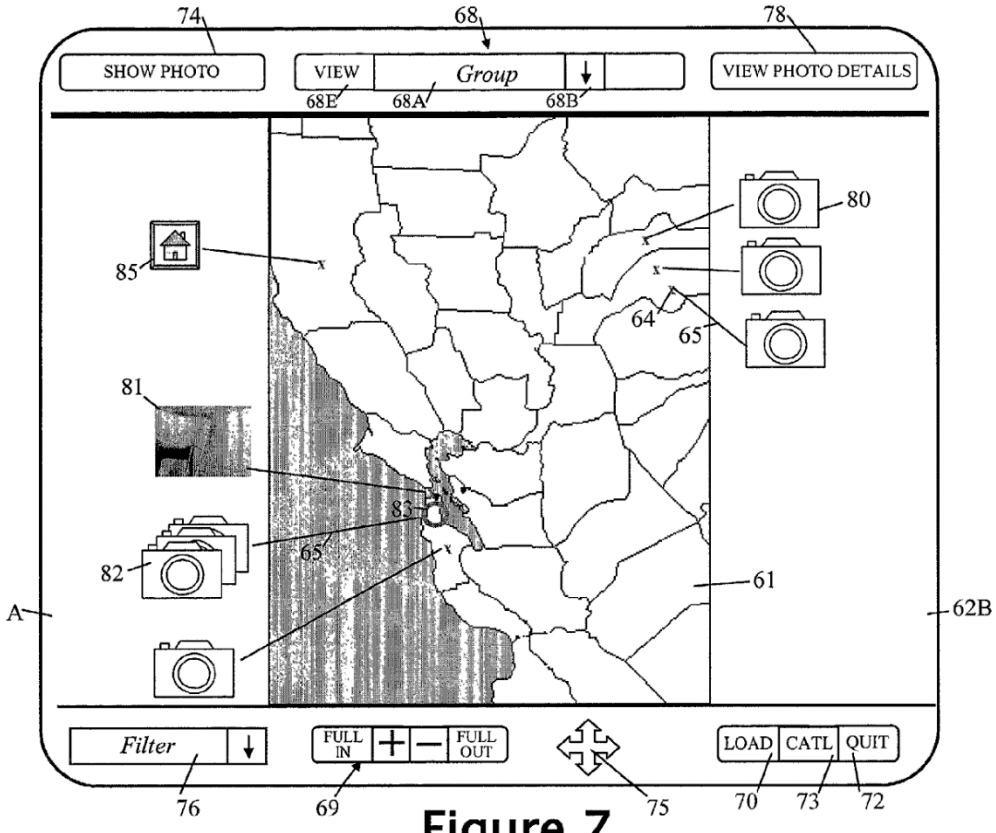


Figure 7

(Squibbs, Fig. 7.)

79. The Map View mode shown in Figure 7 allows a user to browse the album after it has finished editing the photo metadata and assigning the photos to groups. (Squibbs, ¶0074.) Squibbs explains that "[t]he starting map displayed in the Map View Mode is, for example, a world map or a map encompassing the locations of all the photos recorded in the album; alternatively, the map displayed could be the same map as being used in the Catalogue Mode before transiting to the Map View Mode." (Squibbs, ¶0075.) Figure 7 shows photos represented "either as thumbnails **81**, individual photo icons **80**, group icons (see current-abode group icon **85**), or concentration icons (see icon **82**)." (Squibbs, ¶0075.) Squibbs also discloses (in Figure 8) the ability to display a full-size image of a photo selected from the Map View Mode. (Squibbs, ¶0091, Fig. 8.)

80. Squibbs discloses a number of ways in which a photo can be associated with location data. In the example above shown in Figure 3, the digital camera itself has a built-in GPS receiver. In another embodiment shown in Figure 11, a digital camera **90** transmits the photo image data to a cell phone **20**, which in turn uploads the image data over a cellular connection to service system **40** for storage on network store **43**. (Squibbs, ¶0101, Fig. 11 (showing transfer **105**); *see also id.*, ¶0031 (noting that the photo store can be "external").) The cell phone, concurrently with the upload of photo image data, also transmits location information associated with the photo

image data. (Squibbs, ¶0101.) Squibbs explains that the cell phone can determine location information in a number of ways, including from "a location server of the mobile radio infrastructure," or using "a GPS system built into the cell phone." (Squibbs, ¶0098; *see also id.*, ¶0101.)

(b) McElfresh (EX1014)

81. **McElfresh**, U.S. Patent No. 6,907,566 B1, is entitled "Method and System for Optimum Placement of Advertisements on a Webpage." I am informed that McElfresh qualifies as prior art because it is an issued U.S. patent that issued from a patent application filed on April 2, 1999, which is before the priority date of the challenged claims.

82. My Declaration cites McElfresh for dependent claims 10-11, 15-16, and 19-20, which recite (among other things) identifying and periodically obtaining data from "**at least one feed**," such as advertising information, and integrating that data into the claimed "**web-based shared information channel**." McElfresh describes a technique for integrating advertisements into a webpage. Figure 1 shows a prior art technique for arranging a number of ads on a particular webpage:

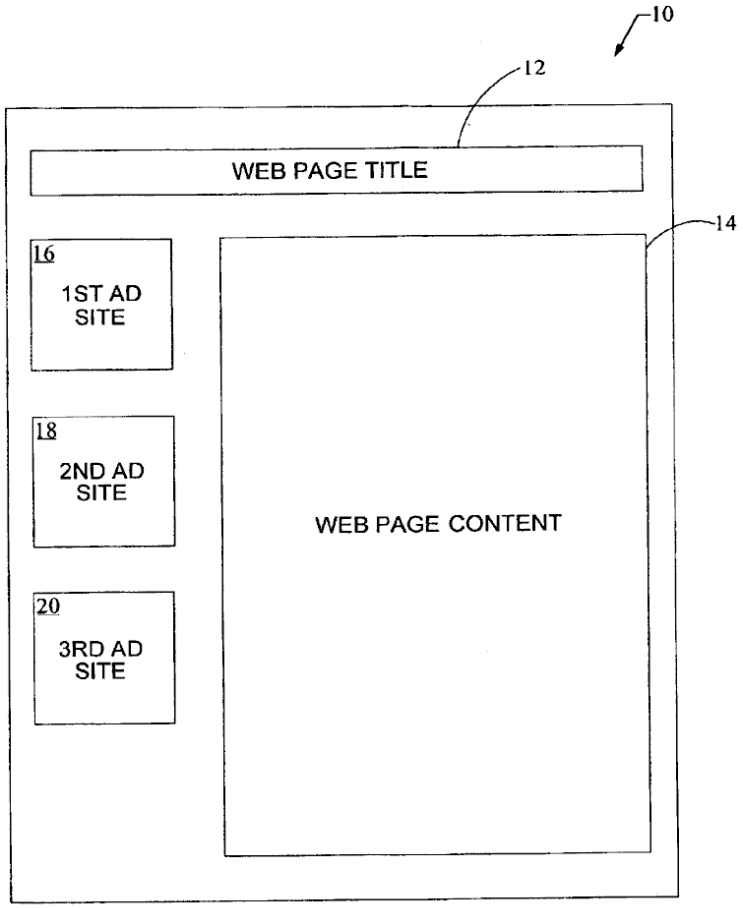


Fig. 1
(Prior Art)

(McElfresh, Fig. 1.)

83. Figure 1 shows "a generalized block diagram layout of a prior art webpage **10**. This page contains a web page title block **12**, and a web page content block **14**. A sequence of ad sites **16-20** are shown which receive and display ads configured to fit in these spots." (McElfresh, 5:19-31.) McElfresh explains that ads in the prior art were typically placed on the page based on advertisers' preferred page location, or randomly. (McElfresh, 5:33-38.)

84. McElfresh purports to disclose an improved technique in which a website can issue a request for ads for inclusion on a webpage, and the ads provided will be selected and ranked in a way that increases the likelihood of click-throughs and maximizes advertising revenue. (McElfresh, 5:20-28.) Figure 3A shows a block diagram of the system or network **100** for optimizing ad placement:

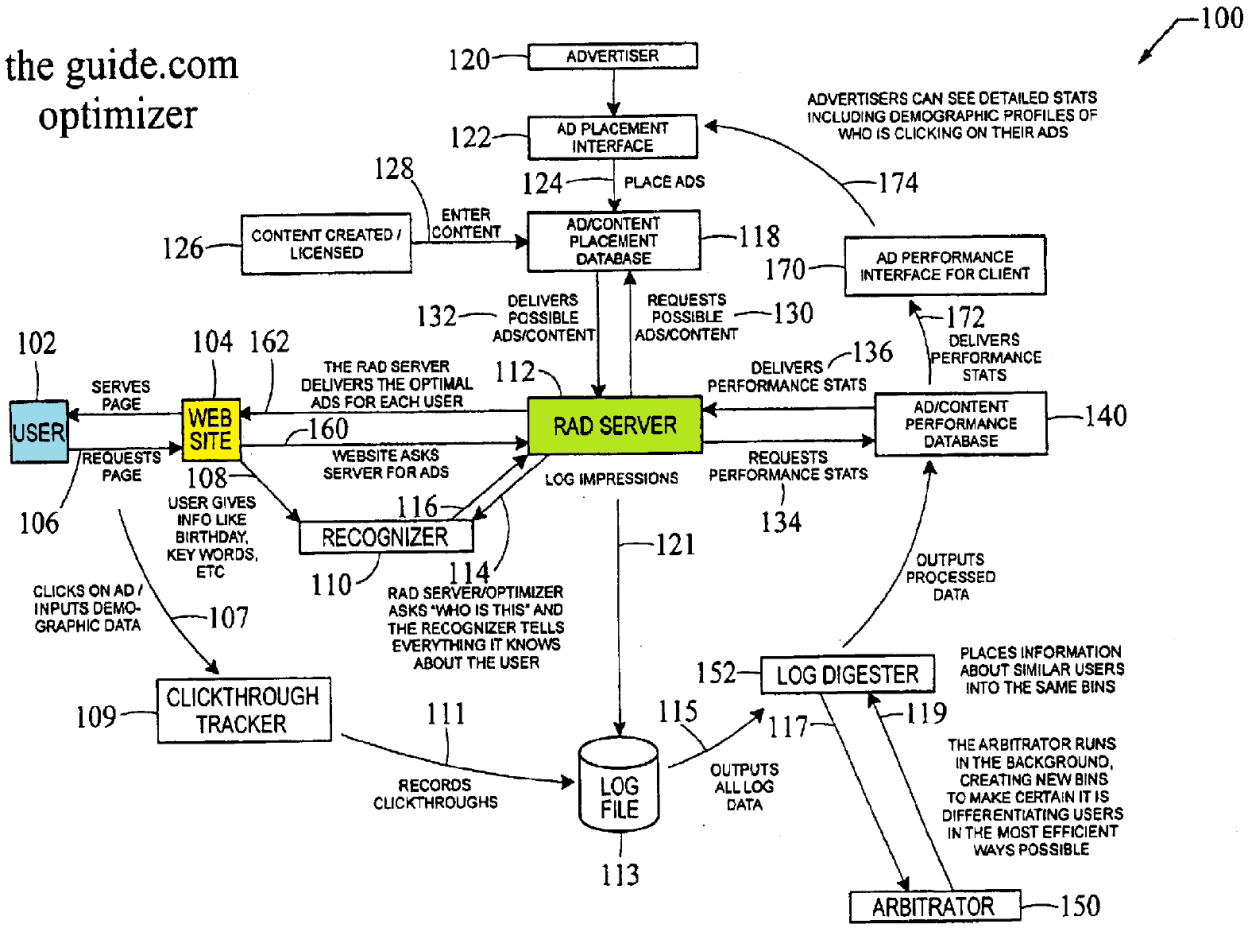


Fig. 3A

(McElfresh, Fig. 3(a) (highlighting added), 6:15-18.) Although Figure 3A above

shows a number of components, the most relevant aspects for purposes of my declaration are Rad Server **112**, website **104**, and user **102**. Figure 3(a) also discloses "an ad/content placement database **118**… for storing a plurality of ads, which might be used for possible display." (McElfresh, 6:57-60.)

85. McElfresh explains that "when a site wants to show a page, it contacts an ad server component **112**, shown at the center of the network **100** in FIG.3(a). This device might also be referred to as a relational server component, and is hence referred to as the Rad Server." (McElfresh, 6:36-40.) The ad server or Rad Server **112** "performs the overall function of gathering the necessary information regarding a particular ad (or set of ads) and the particular user and generating a set of ads which have been optimized for placement on a webpage," based on (among other things) calculated click-through-percentage rates. (McElfresh, 6:42-48.) In another embodiment, the optimization features can be overridden such that "[i]f an advertiser wishes to purchase the right to an entire section of the website or webpage, the ads can simply be placed there without having to compete their way into that position on the page." (McElfresh, 12:50-54.)

86. I will provide more detail about McElfresh in my description of the claim limitations below.

(c) Harvey (EX1010)

87. **Harvey**, U.S. Patent No. 6,487,583 B1, is entitled "System and Method for Information and Application Distribution." I am informed that Harvey qualifies as prior art because it is a U.S. patent issuing from an application filed on February 25, 2000, which is before the priority date of the challenged claims.

88. Harvey discloses techniques for allowing users to create on-line communities in which users can communicate and share information. In one exemplary embodiment, Harvey discloses an on-line community that is very similar, in terms of its purpose and features, to the type of web-based clubs disclosed in Neibauer:

> A creator accesses a central controller over a network to create a community using a community creating module. In this example, the title of the community is "The William Henry Harrison Historical Preservation Society." The community creating module permits the creator to create a community, and designate applications and content presented. in the community by a user interface. The applications in the present example include a chat application object for users to interact with each other in chat format, a schedule application object for scheduling appointments for the events, a pledge application object for pledging a donation, a photo album application object for viewing photos related to William Henry Harrison, and other application objects. Content in the present example includes information about

> upcoming fund raising events and meetings for the Society, information about current funds collected, biographical information about William Henry Harrison, and other information. Different applications may provide different levels of interaction between a user, other users, and the central controller module.

(Harvey, 4:24-43.)

89. I have relied on Harvey as an additional basis to account for Petitioner's proposed construction of "**web-based shared information channel**" in the pending litigation. As noted in **Part III.A** above, I am informed that Petitioner has argued that this term should be construed as having the same meaning as "**mobile information channel**" as "*a virtual location at the content management site at which user-authored content may be added for transmission to the mobile web site*." Petitioner has further argued that "*content management site*" within this construction means "*a web site that allows a user without programming to create and manage content on a mobile web site, or a portion thereof*." The key aspect of the "**mobile information channel**" construction, for purposes here, is that it requires that a mobile information channel also be present on a content management site, and further requires a user to be create or add user-authored content. I have thus cited to Harvey, which discloses the ability of a user to add content to a web-based community using the same interface that the user employed to create the community.

90. Accordingly, the key feature of Harvey, for purposes of my Declaration, is the ability of a community creator to add content to a community before the community is created and launched. As noted above, Harvey explains that "[t]he community creating module permits the creator to create a community, and designate applications and content presented in the community by a user interface." (Harvey, 4:28-30.) More specifically, a user can access a creating module **165** in order to create a new community, which may include web-based community creation. (Harvey, 7:49-54, 7:55-56 ("According to another embodiment of the invention, community creation may comprise a web-based creation.").) "A creator accesses community creating module **165** through a central controller module **115** at step **200** [of Figure 2]." (Harvey, 8:49-50.) "At step **202**, a creator provides community identification information," such as a community name. (Harvey, 7:58-61.) "At step **210**," Harvey explains, "a configuration editor is presented to a creator. A configuration editor may allow a user to build a community, designate content and application objects, subscribe to subscription objects, and add other information associated with the community." (Harvey, 8:63-67; *see also id.*, 9:41-47 ("Options may include… creating specific content….").) Later, "[a]t step **230**, a creator may launch a community." (Harvey, 12:67-13:1.)

B. Ground 1: Claims 1-3, 6-9, 12-14, and 17-18 Are Obvious Over Neibauer In View Of Ausems, and Cheng.

1. Independent Claim 1

91. For reference, claim 1 recites:

1. An apparatus comprising:

[a] a processing element comprising a processor coupled to a memory; and

[b] a network interface coupled to the processing element configured to communicate with a plurality of mobile devices over at least one network;

[c] the processing element being configured:

[c][1] to receive first device-captured data from a first one of the mobile devices via the network interface;

[c][2] to receive second device-captured data from a second one of the mobile devices via the network interface;

[c][3] to integrate the first and second device-captured data into a web-based shared information channel controllably accessible to first and second users of the respective first and second mobile devices via respective personalized content applications of the first and second mobile devices.

('348, 19:27-44 (Claim 1; bracketed notations (*e.g.*, **[a]**) added).)

92. The preamble of claim 1 recites "[**a**]**n apparatus comprising** …"

Although the preamble does not appear to impose specific limitations, I will describe the claimed "**apparatus**" here at a high level and provide more details about its various components in discussing the limitations below.

93. As noted in the summary in **Part V.A** above, Neibauer discloses features of the popular Yahoo! online service, including Yahoo! Clubs. (Neibauer, pp.473-483.) As Neibauer explains, "[a] *club* is a group of Yahoo! members who share a common interest. Each club has its own message board, chat room, as well as places to share photographs, news, addresses, and links." (Neubauer, p.473 (italics in original).) Clubs were accessible from a webpage on the Yahoo! website (http://clubs.yahoo.com), that allowed users to search existing clubs relating to particular topics of interest. (Neibauer, p.473.) Figure 21-8, for example, shows a club page for the club entitled "The James Bond Movie Series":

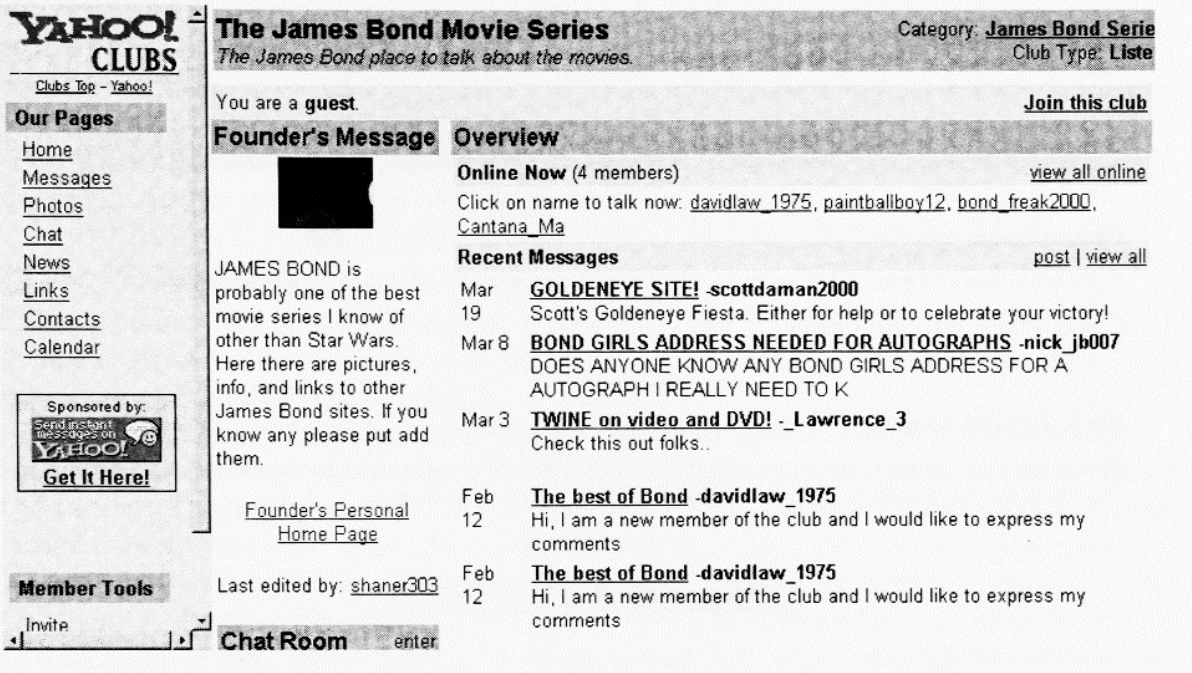


FIGURE 21-8 Club page

(Neibauer, p.475, Fig. 21-8.) The user can join this club by clicking "**Join this club**," shown on the top-right above. (Neibauer, p.475.) After joining, "other members will see your name on the top of the page with the list of members who are online." (*Id.*) A club offers a number of features, accessible from the links shown under "**Our Pages**" on the left side of Figure 21-8 above. For example, each club has its own private message board ("**Messages**"), allows users to share photographs and make photo albums ("**Photos**"), engage in private chat with club members ("**Chat**"), view news headlines ("**News**"), share website links with other club members ("**Links**"), obtain contact information about club members ("**Contacts**"), and post and view events of interest to club members ("**Calendar**"). (Neibauer,

pp.477-480.) For purposes of claim 1, I will focus on the club photo sharing feature described in Neibauer. As explained in Neibauer:

> **Sharing Photographs**
>
> The Photos option in the Our Pages section lets members share photographs and other graphics. Each club is given 5 MB of space to store photographs. The photos are organized into up to 30 albums, each with no more than 24 photos.
>
> There are two types of albums: group and personal. Any member can place a photo in a group album and delete photos that he or she added as well. Only the creator of a personal album can add or delete photographs.

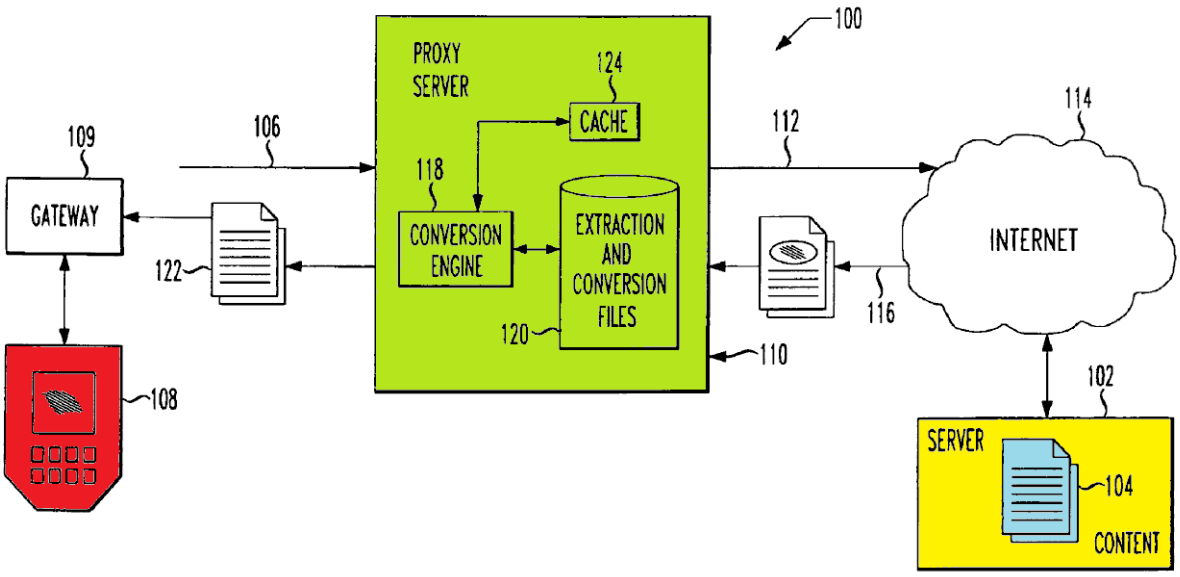
(Neibauer, p.477 (bold in original).) In order to add a photograph to an album, the user identifies the location of the photo and enters a name and description of the photo that will be uploaded. (Neibauer, p.478, ¶¶2-3.)

94. With respect to the claimed "**apparatus**," as explained further below, it would have been obvious based on Neibauer alone, or in combination with Cheng, to make the clubs features of Neibauer available to club members via mobile devices. The claimed "**apparatus**," as explained below, comprises one or more servers that operate to make the clubs feature available to mobile device users, and perform the functions recited in claim 1.

95. With respect to Cheng, it provides mobile functionality by disclosing a

system and method for dynamically reformatting or converting existing web content into a format suitable for mobile devices. (Cheng, *e.g.*, 2:19-32, 3:21-26.) Figure 1 illustrates an architecture **100** of one embodiment:

FIG. 1



(Cheng, Fig. 1 (color annotation added).)

96. The right side of Figure 1 above shows origin web server **102** that contains original web page **104**. (Cheng, 3:36-37 ("In this context, an origin web server **102** is a web server that contains the original web page **104**.").) Web page **104** "is typically an HTML file with references to any component .wav, .mov, and/or Joint Photographic Experts Group (JPEG) files, which together comprise the web page **104**." (Cheng, 4:10-13.) "It is envisioned that each instance of web content **104** each have associated therewith a URL." (Cheng, 3:56-57.) An ordinarily skilled

artisan would have recognized that web page **104** in Cheng could have been represented by any web page in HTML format reachable via the Internet.

97. The left side of Figure 1 shows mobile device **108** connected to proxy server **110**, optionally through gateway **109**. (Cheng, 3:33-36, 5:11-15.) Cheng explains that, in one example, mobile device **108** could be a mobile device with a Palm operating system that includes a web browser. (Cheng, 5:17-23, 2:8-15.) Although only one mobile device **108** is shown in Figure 1, the system of Cheng can support multiple mobile devices. (Cheng, *e.g.*, 5:11-15, 26-29.)

98. Proxy server **110** can also store a device profile for each mobile device **108** based on the device and web browser types. (Cheng, 5:20-23 ("To create a device profile, both the specific version of a mobile device **108** and its web browser (e.g., a Palm V with browser A, etc.) are needed.").) As explained in **Part V.A** above, proxy servers were already well-known and had been commercially deployed for a variety of purposes, including to translate web-based content into a format suitable for mobile devices. (*See* Uwe Hansmann et al., *Pervasive Computing Handbook* (2001) (**EX1012**), p.35 ("A proxy server at AvantGo.com modifies the Web pages in a way that they can be displayed on Palm devices."), p.316, §14.1.1 (discussing commercially-available Palm proxy server).)

99. The general operation of proxy server **110** in Cheng is straightforward.

As shown in Figure 1, mobile device **108** can issue a request **106** for an original web page **104** using standard HyperText Transport Protocol (HTTP), as was well-known in the art, with the request **106** being received by proxy server **110**. (Cheng, Fig. 1, 2:19-21, 3:58-67, 7:65-8:2.) "Upon determining that the requested page **104** resides at the server **102**, the proxy server **110** makes a request **112** for the page. As shown, the proxy server **110** and the server **102** are connected via a network **114** such as the Internet." (Cheng, 3:65-4:2; *see also id.*, 2:21-24.)

100. Proxy server **110** then converts and/or reformats original web page **104** into reformatted web page **122** (shown in Figure 1), which is transmitted to mobile device **108**. (Cheng, *e.g.*, 2:24-29, 5:46-49, 4:56-60.) "The designated HTML content of the retrieved web page **104** is extracted, subsequently and/or converted, and transmitted as a reformatted web page **122** to the mobile device **108**." (Cheng, 5:46-49; *see also id.*, 3:22-26 ("Referring now to FIG. 1, it is envisioned that a proxy server **110** reformats/converts web content **104** on an origin web server **102** into a format **122** readable on any mobile device **108** (which can be any number of different mobile device types).").) The proxy server can also perform conversion on images on the web page to enable viewing on the mobile device, for example, by scaling the images and reducing their colors and resolution. (Cheng, Fig. 7 (704, 706, 708), 10:60-11:8.)

101. ***Rationale and Motivation to Combine (Neibauer with Cheng)***: It would have been obvious to combine Neibauer with Cheng, predictably resulting in the club photo sharing feature described in Neibauer being accessible to club members via mobile devices. Under the proposed combination, therefore, all of the features in Neibauer relied upon above and discussed in the claim limitations below, including the web-based user interface for adding a photo to a photo album and viewing photos, would have been translated and made available to users via mobile devices using the proxy server techniques in Cheng. The claimed "**apparatus**," as described in the limitations below, thus includes at least web server **102** (which would have performed the functions of the web server in Neibauer), and proxy server **110**, which would have worked together to make the features of Neibauer available to mobile devices via a wireless network.

102. The implementation of the proposed combination would have been straightforward as Cheng provides "bolt-on" functionality, with the proxy server capable of converting and reformatting any existing HTML-based web page into a format suitable for display on a mobile device. (Cheng, *e.g.*, 2:30-32 ("The [reformatting] may be done for at least one of groups of devices, individual devices, web site-specific conversions, or for all web sites.").) It would have been obvious that the proxy server, in the proposed combination, could have been operated by the

same or a different entity from the operator of the origin web server. In any case, all of the web-based club features in Neibauer, including the club photo sharing features to which I have mapped the claim limitations below, would have been available to users of mobile devices based on the proxy server techniques described in Cheng. As Cheng discloses the ability to adapt any existing webpage for display on a mobile device, the proposed combination could have been implemented as a simple add-on to the overall system without underlying change to functionality in Neibauer. (Cheng, 2:8-19.) This, in fact, provides one of the motivations to combine as discussed below.

103. Neibauer and Cheng are both analogous references. The '348 patent describes its "Field of the Invention" as relating generally to "network-based communication systems, and more particularly to techniques for information content management in such systems." ('348, 1:29-31.) Neibauer is an analogous reference in the same field as the '348 patent that discloses similar functionality for managing information content accessible through the Internet, through a series of web-based information channels that provide the ability to exchange messages and collaborate among multiple users, and would have been reasonably pertinent to problems facing the inventors including how to implement a web-based system for managing information content and making that content available to users over the Internet.

Cheng is also an analogous reference in the field of network-based communications systems, including the ability to make web-based information content available on mobile devices. Cheng would also have been reasonably pertinent to problems facing the inventors, including how to implement a web-based system for making information content available to mobile device users, including how to properly format and deliver web content to mobile devices given their limited display space and navigational capabilities, an issue that the '348 patent specifically identifies as an "important challenge." ('348, 1:45-50.)

104. An ordinarily skilled artisan would have been amply motivated to combine. As noted in the summary in **Part V.A** above, Neibauer itself suggests the proposed combination by disclosing services such as "Yahoo! Mobile" and "Yahoo! To Go" that enable content from Yahoo! services to be provided to mobile devices such as pagers, cell phones, web phones, and personal digital assistants (PDAs). (Neibauer, pp.166-174.) "Yahoo! To Go lets you receive Yahoo! information on your mobile device." (Neibauer, p.167.) "The Yahoo! To Go option lets you set up your mobile device and Yahoo! so that they work together, as well as specify the content that will be sent to your device." (*Id.*) For example, one option referred to as "Yahoo! On Your PDA" allowed users of browser-enabled PDAs, such as Palm, Windows CE and smartphone devices, to select particular types of Yahoo! content

accessible from their PDA. (Neibauer, pp.171-174.) Although Neibauer does not expressly disclose that the Yahoo! Clubs feature was available for use with mobile devices, it would have been obvious to extend mobile device functionality to cover that feature, in order to allow user-created clubs to be accessed by users via mobile devices. This would have been viewed as a logical (and obvious) extension of the existing mobile features and capabilities described in Neibauer. Providing the clubs feature for use on a mobile device, in fact, would have been obvious based on Neibauer alone without having to even refer to Cheng. Nevertheless, these disclosures in Neibauer provide a further motivation to combine with Cheng to make the Yahoo! Clubs features described above including the club message board, chat, and photo sharing information channels, available to users through mobile devices.

105. An ordinarily skilled artisan would also have been motivated to combine to take advantage of the growing popularity of mobile computing and the increased availability of mobile and wireless computing devices. Cheng explains that as of November 2000, "users of wireless devices now demand that businesses deliver web content for viewing on desktop, or mobile/portable (e.g., handheld) devices." (Cheng, 1:18-22.) The Background of the '348 patent itself admits that "[o]ne of the most rapidly expanding aspects of wireless networking involves the accessing of information content over wireless networks via web-enabled mobile

devices," such as "mobile telephones, personal digital assistants (PDAs), palmtop computers, etc." ('348, 1:35-39.) The Background of the '348 patent also admits that it was "well-known" that mobile devices "not only provide access to the Internet, but can also be used to support other types of wireless networking functionality, such as messaging, distributed collaboration, and location-based services." ('348, 1:39-44.) Market forces would thus have motivated an ordinarily skilled artisan to combine Neibauer with Cheng in order to implement the functionalities from Neibauer described above, so they could be made available to users of mobile devices. This would have advantageously expanded the potential audience for those features beyond traditional desktop computers, and would have improved user experience by allowing the club founder and club members to utilize club features from multiple different physical locations. An ordinarily skilled artisan would also have been motivated to combine to offer the known advantages of *wireless* communication devices, which would have provided portability benefits when compared to devices requiring communications over physical wires or cable.

106. Cheng provides a further express motivation to combine by explaining that, using his proxy server conversion method:

> [W]eb-based content can be created one time, whereafter at least a portion thereof is extracted, reformatted, and transmitted to, for example, one or more handheld device browsers (e.g., the Palm Web

> Clipping Browser from Palm, Inc., Santa Clara, Calif., Pocket Internet Explorer from Microsoft Corp, Redmond, Wash., and Wireless Access Protocol (WAP) on smart phones, etc.). This create-once, deliver-everywhere approach eliminates the need to build and maintain separate web pages for different devices and browsers, as well as the need to install proprietary browser software on the handheld device(s).

(Cheng, 2:8-19.) The techniques of Cheng would have provided a distinct technological advantage by allowing the club system described in Neibauer to be delivered to mobile devices by converting web pages provided via Neibauer, thus obviating the need for the Yahoo! server to generate multiple different versions of those web pages (including potentially multiple mobile versions based on different mobile device and browser types), thus making it considerably simpler to provide club functionality to the web browsers of mobile devices. This would also have eased implementation of the proposed combination by minimizing or eliminating the need to modify the functionality of the base Neibauer system, as the adaptations needed to convert Neibauer's web pages for mobile devices would have been handled by the proxy server techniques in Cheng.

107. As a further motivation to combine, an ordinarily skilled artisan would also have recognized Cheng as an example of proxy server transcoding techniques that were already well-known. As noted in Part V.A(c) above, proxy server

techniques had already been commercially deployed for the very purpose of converting web page content into a format suitable for other types of devices, including mobile handheld devices. The benefits of this approach were well-known and succinctly explained in Uwe Hansmann et al., *Pervasive Computing Handbook* (2001) (**EX1012**), p.320. In explaining the purpose of content adaptation technologies, Hansmann explains:

> The purpose is obvious: When providers deliver content to various pervasive clients, they need to accommodate device specific constraints such as limited memory, slow data transmission, and small screens. Transcoding automatically translates content into different representations for each class of receiving client systems. This simplifies authoring, deployment, and maintenance dramatically! An arbitrary multimedia web page can be provided to Internet TVs, handhelds, and WAP phones without change.

(*Id.*, §14.3, p.320; *see also id.*, at p.321 ("Transcoding is typically done by a gateway or proxy, which intercepts the data exchange between the content server providing multimedia data and the client rendering the received information….").) An ordinarily skilled artisan would have recognized the proxy server techniques as described in Cheng as one of a finite number of existing techniques for seamlessly converting existing web-based content into a format suitable for mobile devices, and as explained above, a skilled artisan would have been amply motivated to use it.

108. An ordinarily skilled artisan would also have had a reasonable expectation of success. To be clear, I am not suggesting that an ordinarily skilled artisan could have replicated the entire Yahoo! service based on the description in Neibauer, as the Yahoo! website has features and functionalities (such as the ability to scale to many millions of users) that go beyond the limitations of the challenged claims. With respect to the Yahoo! Clubs features that I rely upon in this Declaration that disclose the claim limitations, they involve nothing more than straightforward web programming techniques relying on standard technologies such as HTTP, HTML, and could have been implemented using off-the-shelf web browser and web server software. With respect to Cheng, it discloses known techniques for converting HTML documents into formats suitable for wireless mobile devices. Wireless web browsing was well-known as evidenced by the existence of industry-standard technologies such as Wireless Application Protocol (WAP) and the Wireless Markup Language (WML), an XML-based markup language for describing pages for viewing on mobile devices. Proxy server techniques, as explained previously, were also well-known and commercially available. An ordinarily skilled artisan would have found the disclosures of Neibauer and Cheng sufficiently detailed to implement the techniques on which I rely, without undue experimentation.

(a) "a processing element comprising a processor coupled to a memory; and" (Claim 1[a])

109. It would have been obvious that the claimed apparatus includes at least one "**processing element**," such as at least one server that includes a processor and "**a memory**." (Cheng, *e.g.*, 23:16-20 ("Although computer system **1100** is illustrated having a single processor, a single hard disk drive or a single local memory, the system **1100** is optionally suitably equipped with any multitude or combination of processors or storage devices.").) The claimed processor and memory are basic components that any server or other computing device needs in order to function, so they recite nothing of significance.

110. It would have apparent and obvious that origin web server **102** in Cheng (which would take the form of the web server providing the Yahoo! features disclosed in Neibauer), and proxy server **110**, under the proposed combination, would have comprised "**a processing element comprising a processor coupled to a memory**." The functions in Neibauer and Cheng could not function under the proposed combination without these servers, which in turn could not function without memory for storing software instructions for carrying out their respective operations. I note that my mapping of the claimed "**processing element**" as including origin web server **102** and proxy server **110** is entirely consistent with the '348 patent, which makes clear that a processing element or server can itself

comprise multiple servers. ('348, 9:21-24 ("Each of the servers **33**, **35**, **37** and **39** [of processing elements **30**] may comprise one or more of the servers **16** or other elements shown in FIG. 1A, or suitable portions or combinations thereof.").)

111. And even if the claim required that the "**processing element**" be contained within a single physical server, it would have been obvious to combine proxy server **110** and origin server **102** into a single server. This implementation is disclosed by Cheng itself, which provides details about computer system **1100** for use in implementing its proxy server techniques. (Cheng, 22:46-54.) Cheng explains that the computer system implementing the proxy server can optionally be equipped with "any multitude or combination of processors or storage devices." (Cheng, 23:16-20.) Cheng further explains that the computer system, "in point of fact, [is] able to be replaced by, or combined with, any suitable processing system operative in accordance with the principles of the present invention…." (Cheng, 23:20-25.) It therefore would have been obvious that the functionality of origin web server **102** could have been combined with proxy server **110**, to provide a combined server that performs the functions of claim 1. This would have been obvious and trivial in view of Cheng, as ordinarily skilled artisans would have been familiar with known techniques for assigning tasks among servers, including dividing tasks into multiple servers or consolidating tasks within a single server, as needed. For

example, a skilled artisan would have been motivated to combine origin web server **102** with proxy server **110** to improve the performance of Cheng's proxy server techniques, as this would have eliminated the step (and network overhead associated with) origin server **102** having to send the original web page to the proxy server over the Internet. I provided the explanation of the rationale and motivation to combine Neibauer and Cheng in discussing the preamble of claim 1 above.

(b) "a network interface coupled to the processing element and configured to communicate with a plurality of mobile devices over at least one network;" (Claim 1[b])

112. The servers as described in claim 1**[a]** are both accessible over the Internet. (Cheng, 3:67-4:2 ("As shown [in Figure 1], the proxy server **110** and the server **102** are connected via a network **114** such as the Internet."); Neibauer, p.4 (explaining that Yahoo! members need access to an Internet connection), p.473 ("Access Yahoo! clubs by clicking Clubs on the Yahoo! home page or by going directly to http://clubs.yahoo.com to open the page shown in Figure 21-6."), p.64 ("**http://** This is the prefix for the standard type of Internet Web site. The letters stand for Hypertext Transfer Protocol.") (bold in original).) The ability to communicate with a plurality of "**mobile devices**" would also have been obvious. The '348 patent itself expressly defines a "mobile device" as including, among other things, a laptop computer. ('348, 4:45-55.) It was well-known that conventional

laptop computers provided the same functionality as desktop computers and were able to run web browser software and visit web pages on the Internet. It therefore would have been obvious that the Yahoo! website, including the club photo sharing feature discussed above, would have been accessible to a user of a mobile device such as a laptop computer.

113. It would have been obvious that the processing unit (whether as the combination of proxy server **110** and origin server **102** or as a single server) would also have included "**a network interface**," a basic and well-known component that allows a computer to communicate with other devices over a network such as the Internet. ('348, 5:17-19 ("The network interface **25** provides an interface for the processing element **20** to the wireless network **12** or the Internet **14**.").) For example, Cheng discloses that the processing element is coupled to a communication port that facilitates communication with mobile devices, such as through a wireless network. (Cheng, 23:44-51 ("Communications with external devices, for example, the other components of the system described herein, occur utilizing communication port **1516**. For example, optical fibers and/or electrical cables and/or conductors and/or optical communication (e.g., infrared, and the like) and/or wireless communication (e.g., radio frequency (RF), and the like) can be used as the transport medium between the external devices and communication port **1516**.").) Alternatively, the

"**network interface**" can also correspond to gateway **109**, which in this scenario, would have been part of the claimed "**processing apparatus**" and would have provided an interface between mobile devices and proxy server **110**. (Cheng, 3:33-36 ("If necessary, a gateway **109** may optionally be provided that interfaces between, for example, the mobile device **108** and the proxy server **110**.").) Under either theory, the proposed combination discloses "**a network interface coupled to the processing element and configured to communicate with a plurality of mobile devices over at least one network**," *i.e.*, that connects mobile devices to the processing unit over the Internet.

(c) "the processing element being configured:" (Claim 1[c])

114. As explained below, each of the functions of claim 1**[c]** is performed by the claimed "**processing element**" recited in claim 1**[a]**.

(1) "to receive first device-captured data from a first one of the mobile devices via the network interface;" (Claim 1[c][1])

115. As noted in the preamble, Neibauer discloses a photo sharing feature that allows a club member to select a photo to upload and share with club members. As explained in Neibauer:

Sharing Photographs

The Photos option in the Our Pages section lets members share

> photographs and other graphics. Each club is given 5 MB of space to store photographs. The photos are organized into up to 30 albums, each with no more than 24 photos.
>
> There are two types of albums: group and personal. Any member can place a photo in a group album and delete photos that he or she added as well. Only the creator of a personal album can add or delete photographs.

(Neibauer, p.477 (bold in original).) In order to add a photograph to an album, the user identifies the location of the photo and enters a name and description of the photo that will be uploaded. (Neibauer, p.478, ¶¶2-3.)

116. More specifically, Neibauer discloses a web-based user interface that allows a club member to select a photo file to upload to a photo album, in order to share it with other club members. As explained in Neibauer:

> **Adding a Photograph to an Album**. You can add a photo to an album starting from the list of albums or the list of photos in an album. Just follow these steps:
>
> **1**. If you are viewing the Photo Albums page, click Add Photo on the right side of the name of the album where you want to insert the photo. If you are looking at the list of photos already in an album, click the Add Photo button on the top of the page.
>
> **2**. In the page that appears, enter either the path and name of the photo on your disk or click Browse to locate the file. You can also click the On The Web link to designate a photograph located

on a Web page.

3. Enter a name and description of the photo.

4. Select an option from the Resize Photo section. Resizing allows Yahoo! to adjust the size of the photograph to make better use of the club's Web space and to make the photos easier to view. You can select Don't Resize, Large, Medium, or Small.

5. Click Preview to see how your photo will appear, or click Upload to move a copy of the photo into the club's Web space.

(Neibauer, pp.477-478; *see also* pp.477-478 (showing clickable "Add Photo" option available on album pages).)

117. The combination thus renders obvious that the processing element is configured "**to receive first device-captured data from a first one of the mobile devices via the network interface**," by allowing the user to upload a photo ("**first device-captured data**"). Under the proposed combination of Neibauer with Cheng, the photo would have been received by the proxy server **110** and origin web server **102** in Cheng ("**processing element**"), via a mobile device used by a club member. The photo would also have been received "**via the network interface**," as explained in claim 1**[b]**, because that interface would have facilitated communications between the mobile device and the processing element over the Internet. It would have been obvious that the photo would have been "**first device-captured data**," such as a digital photograph. (Neibauer, p.478, Fig. 21-10 (showing exemplary club photo

album listing photos of Denise Richards and Famke Janssen).)

118. I note that the claim merely requires that device-captured data be received "**from a first one of the mobile devices**," which does not appear to expressly require that the data actually have been captured using the mobile device itself (such as using a built-in camera). Nevertheless, to the extent the claim were interpreted to impose such a requirement, it would have been obvious that the photo uploaded by a club member, under the combination of Neibauer and Cheng, could have included device-captured data that was captured by the mobile device itself. This is because portable communications devices prior to June 2002 included digital cameras that allowed devices to capture, store, and transmit digital images. In the event Patent Owner were to argue that incorporation of digital cameras into mobile devices was not well-known as of June 2002, I have cited to **Ausems** to show an example of a mobile communications device that, among other things, incorporated a digital camera for recording, storing, and transmitting digital images.

119. The Background of Ausems explains, as was well-known in the art, that "[t]he popularity and use of Personal Digital Assistants (PDAs) and wireless telephones has increased in recent years. A PDA or hand-held computer is primarily a lightweight, compact productivity and communications tool that can typically be held in one hand, leaving the other free to input data with a pen type stylus or a

reduced size keyboard. A PDA provides computing and information storage and retrieval capabilities for personal or business use." (Ausems, 1:12-19.) Ausems further explains that "[i]ncreasingly, wireless telephones are being combined with PDAs in order to perform more advanced functions, such as transmitting, receiving and displaying text messages." (Ausems, 1:27-30.)

120. Ausems discloses a portable mobile device that combines the functionality of a PDA with a wireless telephone. (Ausems, 3:5-8.) This PDA telephone device **100** includes, among other things, a touchscreen display. (Ausems, *e.g.*, 1:57-58, 4:30-39, 6:9-14.) The PDA telephone **100** in Ausems can also run a conventional mobile operating system such as Microsoft Windows CE or Palm, and the operating system "may include a web browser in order to facilitate Internet access for a PDA telephone **100**." (Ausems, 7:64-8:5.)

121. The device also includes a digital camera **190** for recording and storing images, which can be transmitted. (Ausems, *e.g.*, 2:5-6, 5:17-18 ("Camera **190** records video images and stores them within. Additionally, video images recorded by camera **190** may also be transmitted from PDA telephone **100** in real time during a telephone call (thus allowing for video conferencing)."), 2:5-6 ("[T]he device also includes [a] digital camera for recording images….").) Ausems thus discloses a mobile device that includes a camera for capturing image media.

122. ***Rationale and Motivation to Combine (Neibauer and Cheng with Ausems)***: It would have been obvious to combine Neibauer and Cheng with Ausems, predictably resulting the system under the proposed combination, further adapted such that the processing element would have received "**first device-captured data from a first one of the mobile devices**," in the form of a photo captured by a digital camera incorporated into the mobile device, to the extent the claim were interpreted to impose such a requirement. For example, under the proposed combination with Ausems, the club member would have obtained image data using a digital camera of its mobile device, which would have been transmitted for upload to the club for sharing with other club members using the photo sharing features described in Neibauer. (Neibauer, pp.477-478.)

123. Ausems is an analogous reference in the same field of the '348 patent of wireless and mobile communications, and would have been reasonably pertinent to problems facing the inventor. For example, Ausems would have been reasonably pertinent to the problem of how to obtain device-captured data using a mobile device, and the problem of how to share that data with other users. Ausems would also have been reasonably pertinent in informing the inventor about technological features and capabilities of conventional mobile devices. Ausems would also have been reasonably pertinent as it discloses a wireless telephone that also incorporates

wireless communications and digital camera functionalities, thus addressing the problem of how to obtain and share image data captured using a mobile device.

124. An ordinarily skilled artisan would have been amply motivated to combine. The ability to share media data captured by the mobile device would have dramatically expanded the universe of image data that the club member could have shared with other members. This is because the club member would not have been restricted to sharing preexisting images obtained from third parties; the member could instead have captured a potentially infinite number and variety of its own images (via the digital camera in its mobile device) and share them with other club members. This would not only have expanded the variety of shared content, but would have made the club experience more compelling to other club members because such images would have been more unique and compelling as compared to preexisting images with which club members may already have been familiar.

125. An ordinarily skilled artisan would also have had a reasonable expectation of success. As Ausems confirms that, as of its February 1999 filing date, mobile communications devices with digital cameras and the ability to transmit images captured by digital cameras were known. These functionalities were already becoming commonplace on commercially-available wireless devices by June 2002. An ordinarily skilled artisan would have found the disclosures of Neibauer, Cheng

and Ausems sufficiently detailed to implement the techniques on which I rely, using conventional programming techniques, without undue experimentation.

(2) "to receive second device-captured data from a second one of the mobile devices via the network interface; and;" (Claim 1[c][2])

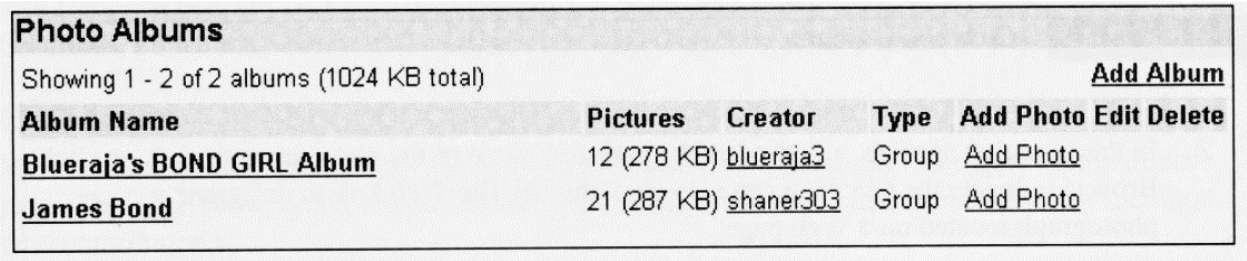
126. This limitation adds nothing that was not already covered in the discussion of claim 1**[c][1]**, as it merely repeats the same step for a "**second one of the mobile devices**." Under the proposed combination, claim 1**[c][2]** takes place when a second club member uses its own mobile device to upload a different photo to a group album (using the same technique described in claim 1**[c][1]**). (Neibauer, *e.g.*, p.477 ("Any member can place a photo in a group album….").) As also noted previously, Cheng discloses that multiple mobile devices can be used with the proxy server conversion techniques. (Cheng, *e.g.*, 5:11-12, 5:26-29.) This would have allowed both the first and second mobile devices to use and add photos to the club photo sharing feature described in Neibauer, under the proposed combination.

(3) "to integrate the first and second device-captured data into a web-based shared information channel controllably accessible to first and second users of the respective first and second mobile devices via respective personalized content applications of the first and second mobile devices." (Claim 1[c][3])

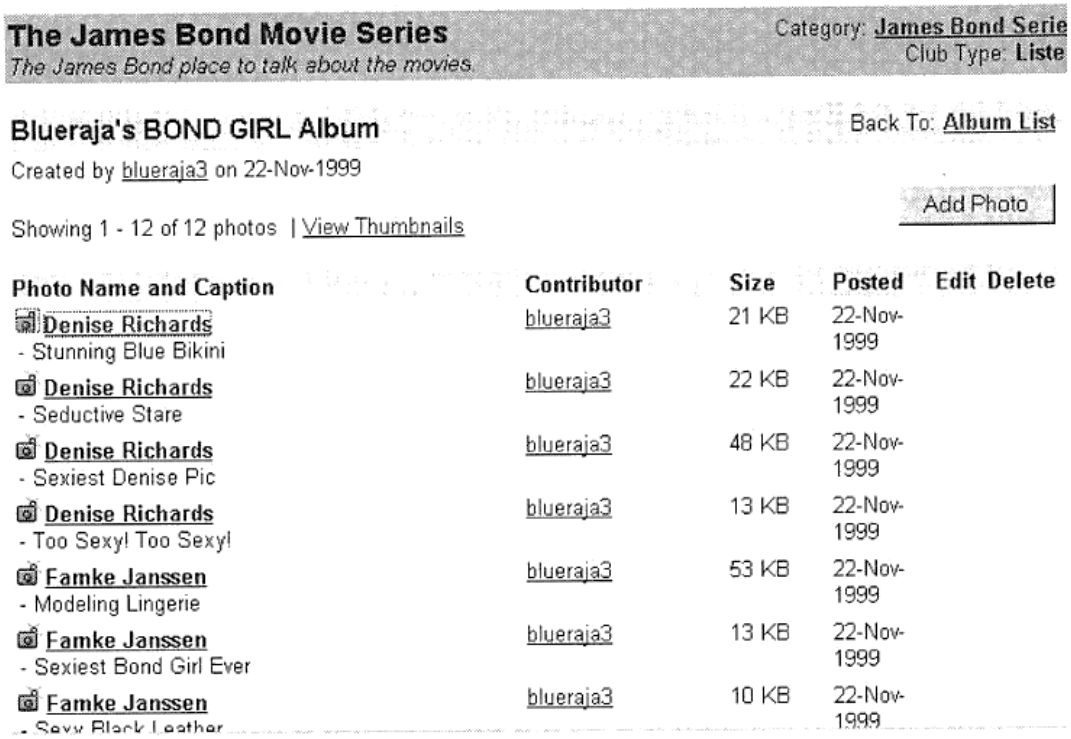
127. Under the proposed combination, photos uploaded by club members

would have been integrated into a photo album using the club photo sharing feature ("**a web-based shared information channel**"), as described below.

128. The club photo sharing feature in Neibauer provides a user interface for allowing club members to select a photo album and view the photos within the selected album. First, with respect to selection of an album:



(Neubauer, p.477.) The user interface shown above lists a number of available photo albums. This user interface, as noted above, has an "Add Photo" link to allow a member to add a new photo to the album, discussed for claim 1**[c][1]** above. "Click an album name to see a list of the photographs stored there, as shown in Figure 21-10." (Neibauer, p.477.)



The James Bond Movie Series Category: James Bond Serie
The James Bond place to talk about the movies. Club Type: Liste

Blueraja's BOND GIRL Album Back To: Album List

Created by blueraja3 on 22-Nov-1999

Showing 1 - 12 of 12 photos | View Thumbnails Add Photo

Photo Name and Caption	Contributor	Size	Posted	Edit	Delete
Denise Richards - Stunning Blue Bikini	blueraja3	21 KB	22-Nov-1999		
Denise Richards - Seductive Stare	blueraja3	22 KB	22-Nov-1999		
Denise Richards - Sexiest Denise Pic	blueraja3	48 KB	22-Nov-1999		
Denise Richards - Too Sexy! Too Sexy!	blueraja3	13 KB	22-Nov-1999		
Famke Janssen - Modeling Lingerie	blueraja3	53 KB	22-Nov-1999		
Famke Janssen - Sexiest Bond Girl Ever	blueraja3	13 KB	22-Nov-1999		
Famke Janssen - Sexy Black Leather	blueraja3	10 KB	22-Nov-1999		

FIGURE 21-10 Club photo album

(Neibauer, p.478, Fig. 21-10.) Figure 21-10 as noted above shows a partial list of photographs stored in an album. This user interface also has an "Add Photo" button to allow a member to add a new photo to the album. "For each photo you will see the title, contributor's name, the photo's size, and the date it was posted. Click a photo to see the photo on your screen." (Neibauer, p.477.) Although the example in Figure 21-10 shows provided received from one contributor (blueraja3), any member of a group can post a photo that will be accessible through a photo album. (Neibauer, p.477 ("Any member can place a photo in a group album….").) It therefore would have been obvious that when two club members upload photos to a

particular club photo album, pursuant to claim 1**[c][1]-[c][2]**, that photo album would have included and listed the photos provided by both members. The proposed combination therefore renders obvious "**integrat**[ing] **the first and second device-captured data into a web-based shared information channel**," because the photos provided by the first and second users to a particular photo album would have been incorporated into the club photo sharing feature when added to the album.

129. The photo sharing feature of Neibauer also discloses a "**web-based shared information channel**." I understand that Patent Owner in the related litigation contends that this term means "*a medium for transferring information accessible to more than one user via the Internet*." If this construction were applied, the club photo sharing feature plainly discloses it, as it provides a medium that allows club members to upload and later view photos via the Internet.

130. The term "**web-based shared information channel**" is not defined in the '348 patent's description of the invention, nor is it used outside the claims. The only mention of "information channels" in the '348 patent refer to "mobile information channels." I understand that Petitioner in the pending litigation contends that "**web-based shared information channel**" should be construed as synonymous with mobile information channel. The written description explains that "[t]he content management site permits the user to enter information in accordance

with a specified format comprising a plurality of selectable mobile information channels each corresponding to an information category. The mobile information channels are also referred to as 'M-channels' herein…." ('348, 5:34-40.) The patent further asserts that "the M-channels allow unsophisticated users to easily and efficiently author message data or other types of information content to be made accessible via a collaborative workspace, a data mailbox, a collaborative community, or other type of mobile site or portion thereof generated or otherwise managed in the system **10**." ('348, 8:27-36.) In fact, the '348 patent expressly identifies, as examples of mobile information channels, "discussion forum," "chat," and "photo blog" ('348, 8:46-57), mirroring the club features of Neibauer with the latter in particular mirroring the club photo sharing feature.

131. I am informed that Petitioner has argued that "**web-based shared information channel**" should be construed the same as mobile information channel, which Petitioner contends is "*a virtual location at the content management site at which user-authored content may be added for transmission to the mobile web site*." I am further informed that Petitioner has argued that the term "content management site" refers to "*a web site that allows a user without programming to create and manage content on a mobile web site, or a portion thereof*." These constructions are also satisfied by the proposed combination because Neibauer discloses a web-based

user interface for creating a club that provides a virtual location at a content management site, *i.e.*, the portions of the Yahoo! website for club creation where the club founder can create and manage content that will be provided on the club. (Neibauer, pp.480-482.) It would have been obvious that the club-creation interface could have further allowed the club founder to add user-authored content to the club, such as messages for the club message board, photos for the club photo album, and so forth. This content would also have been made available on a "*mobile web site*," *i.e.*, a website designed to be accessed by a mobile device, based on the combination with Cheng as explained in detail above, because the web pages for the created club would have been translated into a suitable format and transmitted to a mobile device. I have also provided separate **Grounds 4-6** below, which add the Harvey reference (**EX1010**), to address Petitioner's proposed construction of mobile information channel, in the event it is adopted for purposes of this IPR.

132. The photo sharing feature is also "**controllably accessible to first and second users of the respective first and second mobile devices via respective personalized content applications of the first and second mobile devices**," because the two club members would have accessed the club photo sharing feature over the Internet via their mobile devices. The web browsers on the mobile devices also comprise "**personalized content applications**." This is consistent with the

plain and ordinary meaning of "application" in this context, which simply refers to a software program for carrying out a particular task. (*See Microsoft Computer Dictionary* (5th ed. 2002) (**EX1021**), p.31 ("**application** *n*. A program designed to assist in the performance of a specific task, such as word processing, accounting, or inventory management.") (bold and italics in original).) Under the proposed combination, each club member would have used the web browsers on their mobile device to post personalized content using the club photo album feature. (Neibauer, p.477-479.) For example, each club member can create their own "personal photo album," where the member can add photos to share with other members. (Neibauer, p.477.) Neibauer discloses numerous other club features that enable a member to create and view personalized content, including personalized messages using the private message board. (Neibauer, p.483, Fig. 21-13 (showing personalized "Welcome" message posted by club founder).) A club member can also engage in online chat with other club members. (Neibauer, p.479.) These features are "**controllably accessible**" to the first and second users through the club home page, as shown below:

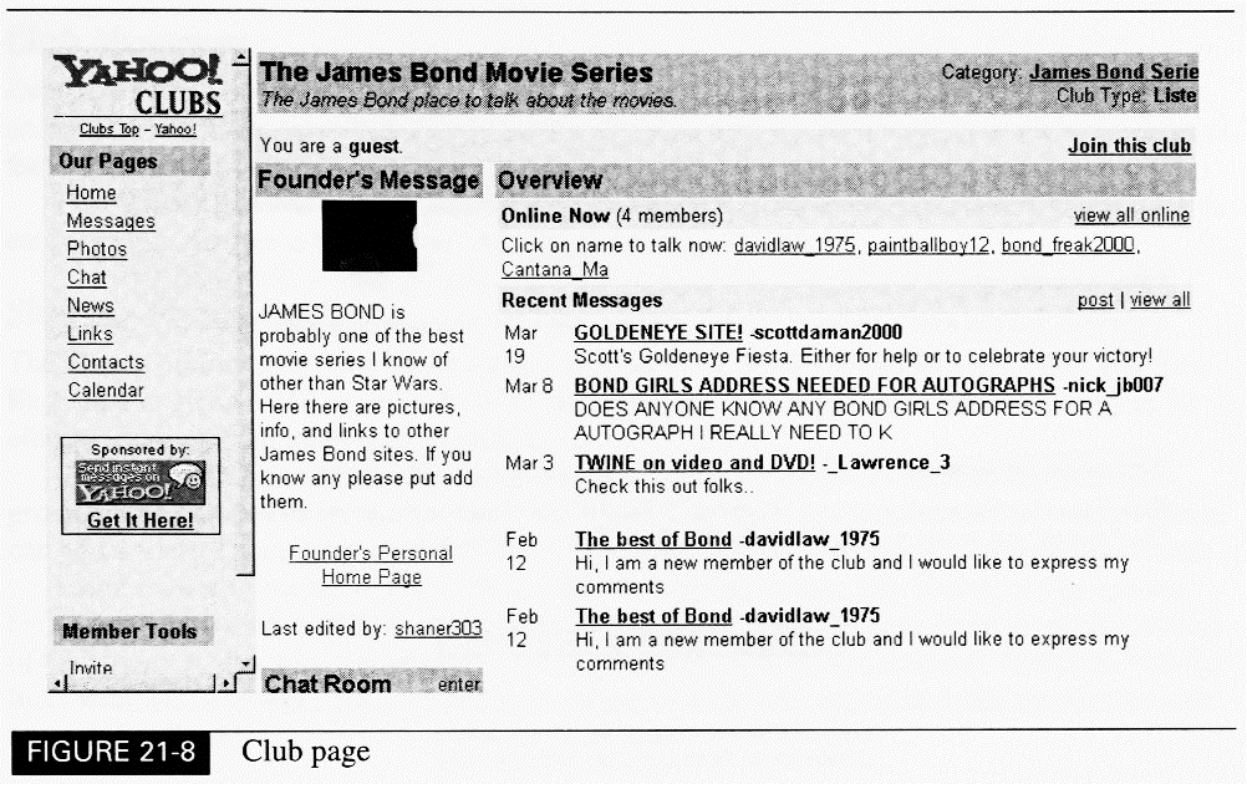


FIGURE 21-8 Club page

(Neibauer, p.475, Fig. 21-8.) The features of the club can be controllably accessed by users from the links shown under "**Our Pages**" on the left side of Figure 21-8 above. For example, each club has its own private message board ("**Messages**"), allows users to share photographs and make photo albums ("**Photos**"), engage in private chat with club members ("**Chat**"), among other features. (Neibauer, pp.477-480.) By allowing the user to access personalized content, under the proposed combination with Cheng, each the web browser application on each mobile device "**comprises a personalized content application**." This is consistent with the '348 patent, which discloses use of a browser on the mobile device to access the mobile website. ('348, 13:21-24 ("The mobile site home page **400** may be accessed, for

example, by entering a corresponding URL of the mobile site into a browser at one of the mobile devices **15**.").)

133. As a separate and independent theory for the claimed personalized content application, Neibauer discloses the ability of a user to customize their own Yahoo! home page using Yahoo! Companion, a toolbar added to the web browser window. (Neibauer, pp.56.) This feature allows the user, among other things, to personalize and customize aspects the content of the user's My Yahoo! home page as viewed by the browser. (Neibauer, pp.66-74.) This provides another way in which the web browser, under the proposed combination, would have comprised a "**personalized content application**." In either case, the web browser applications on the mobile devices would have been applications that allowed club members to access personalized content through the features described above.

2. Claim 2: "The apparatus of claim 1 wherein at least one of the first device-captured data and the second device-captured data comprises image data."

134. As explained for claim 1, both the first and second device-captured data comprises photo (image) data.

3. Claim 3: "The apparatus of claim 1 wherein at least one of the first device-captured data and the second device-captured data comprises video data."

135. It would have been obvious to a person of ordinary skill in the art that

the first or second device-captured data could have comprised "**video data**," under at least two different theories. First, it would have been obvious for a club user to upload an image file in "GIF" format, which is commonly understood as standing for Graphics Interchange Format. GIF was (and remains to this day) a well-known format for encoding image data and was the *de facto* image standard for images during the early days of the Web. It was well-known that GIF graphic files were not limited to a single image – a GIF file could contain a number of image frames to displayed sequentially in order to videos or animations. (*See* Sean Wagstaff, *Animation on the Web* (1999) (**EX1018**), pp.235-236 ("[N]o format has come close to gaining the popularity and widespread acceptance of GIFs. This acceptance is due to the ease of creating GIFs… and to the fact that animated GIFs are supported in most browsers without the hassle of installing extra plug-ins.").) Under this theory, the first or second "**device-captured data**" of claim 1 would have comprised "video data," as video data is nothing more than a collection of individual (still) images played in sequence. A GIF file, under the proposed combination, would have included a series of individual device-captured photo images stored in a GIF file and displayed in sequence to create a moving picture.

136. This feature would have trivial to implement as Cheng already discloses the ability to provide, to mobile devices, GIF images on web pages. (Cheng, 4:10-

16 ("The web page **104** is typically an HTML file with references to any component .wav, .mov, and/or Joint Photographic Experts Group (JPEG) files, which together comprise the web page **104**. It should also be understood that other file formats (e.g., .gif (graphics interchange format)) and web page components (e.g., Java applets) can also be accessed and returned to the proxy server **110**.").) I note that the '348 patent itself does not place any limits on the type, format, or length of "**video data**" that can be provided. The written description contains only a single reference to "video," merely listing it along a long list of exemplary media types that can be selected or uploaded. ('348, 17:35-37 ("Selectable or uploadable media may include, for example, an XML/RSS feed, a database entry, a syndication item, a document, a video, a photo, a graphic, a music file, etc.").)

137. Second, Ausems discloses a mobile device that includes video capture capabilities. (Ausems, 3:15-22 ("PDA telephone **100** may be equipped with optional enhanced feature sets, including… video conferencing/video capture capabilities…."), 5:17-22 ("Camera **190** records video images and stores them within. PDA telephone **100**. Additionally, video images recorded by camera **190** may also be transmitted from PDA telephone **100** in real time during a telephone call (thus allowing for video conferencing).").)

138. It therefore would have been obvious, under either theory, to implement

the proposed combination such that the first or second "**device-captured data**" of claim 1 would have comprised "**video data**." This would have predictably resulted in the club photo sharing feature of Neibauer further providing the ability to upload and share video data. An ordinarily skilled artisan would have been motivated to implement this capability because video data may be more compelling and interesting to some users when compared to single (still) image data.

4. Claim 6: "The apparatus of claim 1 wherein a given one of the first and second mobile devices comprises one of a mobile telephone, a tablet computer, a GPS-based navigational device, a watch and a portable game player."

139. Cheng and Ausems both confirm that the mobile devices under the proposed combination would have comprised at least "**a mobile telephone**." (Cheng, 5:30-35 ("[F]or example, an organization's mobile device **108** users will often be visiting graphic-intensive web sites… [and] will be viewing these sites on, say, smart phones (i.e., a cellular telephone that provides voice, limited Internet access, email, pager and/or facsimile service, and typically has a small screen and little memory"); Ausems, *e.g.*, 3:5-8 ("FIGS 1*a*-1*d* illustrate PDA telephone **100** that provides the combined functionality of a Personal Digital Assistant (PDA) and a wireless telephone….").) Ausems further confirms that each mobile device could have been "**a GPS-based navigational device**." (Ausems, 5:38-47 ("… PDA telephone **100** includes a Global Position System (GPS) receiver/engine having an

associated antenna **195** for receiving signals from GPS satellites… The use of such GPS technology may allow for the inclusion of mapping and other features associated with conventional GPS devices.").)

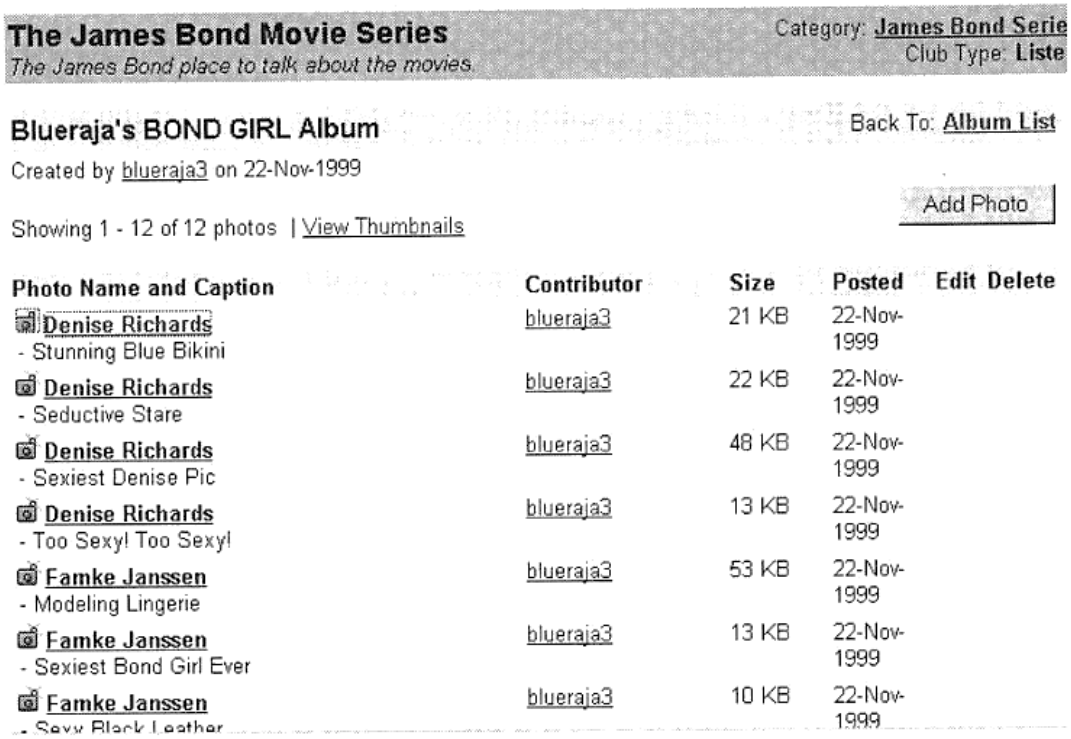
5. Claim 7: "The apparatus of claim 1 further comprising a web server that includes the network interface and the processing element and wherein the web server is accessible to the first and second mobile devices over the Internet via the network interface."

140. The claimed "**web server**" for claim 7 corresponds to the combination of origin server **102** (which provides the functions of Neibauer) and proxy server **110** (which makes those functions available to mobile devices), as discussed for claim 1**[a]-[b]** above These two servers collectively provide a "**web server**" that makes the web pages available to club members who access the photo sharing feature using mobile devices. As noted, the '348 patent allows a "server" to comprise more than one server. ('348, 9:21-24 ("Each of the servers **33**, **35**, **37** and **39** [of processing elements **30**] may comprise one or more of the servers **16** or other elements shown in FIG. 1A, or suitable portions or combinations thereof.").) As explained for claim 1**[a]**, it would also have been obvious to combine origin server **102** and proxy server **110**, to the extent the claim requires a single server. Under the proposed combination and under this alternative theory, therefore, the "**web server**" would have included the claimed network interface, processing element and would

have been accessible to the first and second mobile devices over the Internet via the network interface, as fully explained for claim 1.

6. Claim 8: "The apparatus of claim 1 wherein the web-based shared information channel is configured to allow a given one of the first and second users to enter a message via the personalized content application of its corresponding mobile device and wherein the message is integrated with the first and second device-captured data into a persistent version of a given set of shared information content of the web-based shared information channel so as to be accessible with the first and second device-captured data to the first and second users of the respective first and second mobile devices via the respective personalized content applications of the first and second mobile devices."

141. As explained for claim 1, the club photo sharing feature ("**the web-based shared information channel**") allows club members who upload photos to also enter a message via their web browsers, such as a name and textual description of their photos. (Neibauer, p. 478, ¶3 ("Enter a name and description of the photo.").) This message would have been entered using the mobile web browser ("**the personalized content application of its corresponding mobile device**"), as described for claim 1**[c][3]**. This message is then integrated with the photo data as shown in the photo album view:



The James Bond Movie Series Category: James Bond Serie
The James Bond place to talk about the movies. Club Type: Liste

Blueraja's BOND GIRL Album Back To: Album List

Created by blueraja3 on 22-Nov-1999

Showing 1 - 12 of 12 photos | View Thumbnails Add Photo

Photo Name and Caption	Contributor	Size	Posted	Edit	Delete
Denise Richards - Stunning Blue Bikini	blueraja3	21 KB	22-Nov-1999		
Denise Richards - Seductive Stare	blueraja3	22 KB	22-Nov-1999		
Denise Richards - Sexiest Denise Pic	blueraja3	48 KB	22-Nov-1999		
Denise Richards - Too Sexy! Too Sexy!	blueraja3	13 KB	22-Nov-1999		
Famke Janssen - Modeling Lingerie	blueraja3	53 KB	22-Nov-1999		
Famke Janssen - Sexiest Bond Girl Ever	blueraja3	13 KB	22-Nov-1999		
Famke Janssen - Sexy Black Leather	blueraja3	10 KB	22-Nov-1999		

FIGURE 21-10 Club photo album

(Neibauer, p.478, Fig. 21-10.) Figure 21-10 as noted above shows a partial list of photographs stored in an album. For each photo ("device-captured data"), the textual name and description ("**message**") entered by the uploading club member is displayed along with a link to the photo itself. (Neibauer, p.477.) For example, the first photo posted above is named "Denise Richards" and described as "Stunning Blue Bikini." As a result, each photo in an album integrates the device-captured data and textual message data into a "**persistent version of a given set of shared information content of the web-based shared information channel**," because both the photo and textual name and description are accessible to users via the club

photo sharing feature. A person of ordinary skill in the art would have appreciated that the integration of the message and photo is "**persistent**" because the two pieces of information are stored in association with each other and viewable together by both the first and second users through the user interface as described in Neibauer. The "persistent version" is thus also accessible to the first and second users via their respective mobile devices and personalized content applications.

7. Claim 9: "The apparatus of claim 8 wherein the message is delivered to one or more of the mobile devices over a wireless network."

142. It would also have been obvious that the message is delivered to one or mobile devices "**over a wireless network**." For example, Neibauer discloses in connection with the Yahoo! Mobile service that a mobile PDA could have included a "GSM Phone" modem. (Neibauer, p.171, ¶5.) GSM, which stands for **G**lobal **S**ystem for **M**obile Communication, was a dominant wireless (cellular) mobile network in widespread use in the United States the early 2000s. Cheng similarly discloses wireless network device connectivity. (Cheng, *e.g.*, 2:4-7 ("[T]he present invention provides a system, method, and medium that extracts a portion of web page content and reformats the extracted content for delivery to one or more wireless devices."); *see also id.*, 5:33 (mobile device **108** can include "a cellular telephone").) Cheng explains that the computer system that carries out the conversion and

reformatting of web pages can include a communication port **1516**, which is used for "[c]ommunications with external devices, for example, the other components of the system described herein," which can use transport media such as "wireless communication (e.g., radio frequency (RF), and the like)" (Cheng, 23:44-51.) It therefore would have been obvious that the messaging communication provided under the proposed combination would have been provided "**over a wireless network**," such as a known cellular communications network such as GSM commonly used to communicate information to and from wireless mobile devices. An ordinarily skilled artisan would have been motivated to allow for messaging communications over a wireless network, as explained for the preamble of claim 1, in order to take advantage of the growing popularity and availability of mobile device communication, which would have provided portability benefits when compared to communications requiring physical wires or cable.

8. Independent Claim 12: "A network-based communication system comprising a plurality of servers configured to communicate over said at least one network, a given one of the servers comprising the apparatus of claim 1."

143. Independent claim 12 similar to claim 1 but requires that "**a given**" server comprise the "**apparatus**" of claim 1. This claim would have been obvious for the same reasons as claim 1. To start, the proposed combination renders obvious "[**a**] **network-based communication system comprising a plurality of servers**

configured to communicate over said at least one network," which include multiple origin servers **102** on the Internet that contain web page content, along with at least proxy server **100**. (Cheng, 3:49-53 ("In general, embodiments of the present invention contemplate that architecture **100** comprises one or more servers **102** having web content (in the form of at least one web page **104**), a proxy server **110**, at least one mobile device **108**, and at least one network **114**.").) I note that there appears to be no antecedent basis for "**said at least one network**," so I have interpreted this language in claim 1 to simply require at least one network.

144. Claim 12 further states that "**a given one of the servers compris**[es] **the apparatus of claim 1**." For purposes of claim 12 and as fully explained for claim 1, it would have been obvious that "**a given one of the servers**" would have corresponded to the combination of proxy server **100** and origin server **102**, as the '348 patent itself makes clear that a server can itself comprise multiple servers. ('348, 9:21-24 ("Each of the servers **33**, **35**, **37** and **39** [of processing elements **30**] may comprise one or more of the servers **16** or other elements shown in FIG. 1A, or suitable portions or combinations thereof.").) Alternatively, "a given one of the servers" would have corresponded to proxy server **100** in Cheng, which as explained for claim 1**[a]** above, would have been combined with origin server **102** providing the functionality of Neibauer, to form a combined server for performing the

functions of claim 1. This implementation is directly supported by Cheng itself, which provides details about computer system **1100** for use in implementing Cheng and its proxy server techniques. (Cheng, 22:46-54.) Cheng explains that the computer system can optionally be equipped with "any multitude or combination of processors or storage devices." (Cheng, 23:16-20.) Cheng further explains that the computer system, "in point of fact, [is] able to be replaced by, or combined with, any suitable processing system operative in accordance with the principles of the present invention…." (Cheng, 23:20-25.) It therefore would have been obvious that the functionality of origin web server **102** could have been combined with proxy server **100**, to provide a combined server that performs the functions of claim 1. This would have been plainly obvious and trivial in view of Cheng, as ordinarily skilled artisans would have been familiar with known techniques for dividing tasks among servers, including dividing tasks into multiple servers or consolidating tasks within a single server, as needed.

9. Independent Claim 13

145. Independent claim 13 recites "[**a**] **method comprising**," and recites steps substantially similar to the functions recited in apparatus claim 1.

(a) "receiving first device-captured data from a first mobile device over at least one network;" (Claim 13[a])

(b) "receiving second device-captured data from a second mobile device over said at least one network; and" (Claim 13[b])

146. These limitations are substantially similar to claim 1**[c][1]-[2]** except that unlike claim 1, these limitations do not require receipt via a "network interface." They are obvious for the same reasons as stated for claim 1. The "**at least one network**," as explained for claim 1, comprises the Internet. (Cheng, 3:67-4:2 ("As shown [in Figure 1], the proxy server **110** and the server **102** are connected via a network **114** such as the Internet."); Neibauer, p.4 (explaining that Yahoo! members need access to an Internet connection), p.473 ("Access Yahoo! clubs by clicking Clubs on the Yahoo! home page or by going directly to http://clubs.yahoo.com to open the page shown in Figure 21-6."), p.64 ("**http://** This is the prefix for the standard type of Internet Web site. The letters stand for Hypertext Transfer Protocol.") (bold in original).)

(c) "integrating the first and second device-captured data into a web-based shared information channel controllably accessible to first and second users of the respective first and second mobile devices via respective personalized content applications of the first and second mobile devices." (Claim 13[c])

147. This step is identical to the function recited in claim 1**[c][3]**, and is

rendered obvious for the same reasons.

10. Claim 14: "The method of claim 13 further comprising: [a] receiving in the web-based shared information channel a message from one of the first and second users via the personalized content application of its corresponding mobile device; and [b] delivering the message over said at least one network to another one of the first and second users via the personalized content application of its corresponding mobile device; [c] wherein the message is integrated with the first and second device-captured data into a persistent version of a given set of shared information content of the web-based shared information channel so as to be accessible with the first and second device-captured data to the first and second users of the respective first and second mobile devices via the respective personalized content applications of the first and second mobile devices."

148. Claim 14 is substantially similar to claim 8. As explained for claim 8, the club photo sharing feature described in Neibauer allows the first and second users to enter "**a message**" using their web browsers in their mobile devices, which would have been delivered to other users (for example, by viewing the photo album with accompanying textual messages as shown in Neibauer Figure 21-10) via their mobile devices. Each message is thus integrated with its respective photo, as recited in the claim and fully described for claim 8.

11. Independent Claim 17

149. Independent claim 17 is substantially similar to claim 1 except that it recites "[**a**] **non-transitory computer-readable storage medium having**

embodied therein executable code of one or more software programs, wherein said executable program code when executed by a processing element causes said processing element," to perform the same functions as claim 1. As explained for claim 1**[a]**, the proposed combination discloses and renders obvious "**a processing element**" and "**non-transitory computer-readable storage medium**," *i.e.*, one or more server computers having access to a memory.

150. It would have been obvious that the functionalities from Neibauer, Cheng, and Ausems relied upon for claim 1 would have been carried out and implemented by software comprising code that is executed by the processing element and stored in the at least one "**non-transitory computer-readable storage medium**," such as a hard disk drive. (Cheng, *e.g.*, 23:64-24:4 (explaining that instructions may be stored in random access memory or hard disk storage until required by the computer system).) It would have been obvious that all of the steps of claim 1, under the proposed combination, would have been carried out by program code stored in a non-transitory computer-readable storage medium and executed by the processing element (such as hard disk drives on the web server and proxy server described in Cheng), to carry out a method of managing information content.

(a) "to receive first device-captured data from a first mobile device over at least one network;" (Claim 17[a])

(b) "to receive second device-captured data from a second mobile device over said at least one network; and" (Claim 17[b])

(c) "to integrate the first and second device-captured data into a web-based shared information channel controllably accessible to first and second users of the respective first and second mobile devices via respective personalized content applications of the first and second mobile devices." (Claim 17[c])

151. These limitations are substantially similar to claim 1**[c][1]-[3]** except that unlike claim 1, these limitations do not require receipt via a "network interface." They are obvious for the same reasons as stated for claim 1. The "**at least one network**," as explained for claim 1, comprises the Internet. (Cheng, 3:67-4:2 ("As shown [in Figure 1], the proxy server **110** and the server **102** are connected via a network **114** such as the Internet."); Neibauer, p.4 (explaining that Yahoo! members need access to an Internet connection), p.473 ("Access Yahoo! clubs by clicking Clubs on the Yahoo! home page or by going directly to http://clubs.yahoo.com to open the page shown in Figure 21-6."), p.64 ("**http://** This is the prefix for the standard type of Internet Web site. The letters stand for Hypertext Transfer Protocol.") (bold in original).)

12. Claim 18: "The non-transitory computer-readable storage medium of claim 17 wherein said executable program code when executed by said processing element further causes said processing element: to receive in the web-based shared information channel a message from one of the first and second users via the personalized content application of its corresponding mobile device; and to deliver the message over said at least one network to another one of the first and second users via the personalized content application of its corresponding mobile device; wherein the message is integrated with the first and second device-captured data into a persistent version of a given set of shared information content of the web-based shared information channel so as to be accessible with the first and second device-captured data to the first and second users of the respective first and second mobile devices via the respective personalized content applications of the first and second mobile devices."

152. Claim 18 is substantially similar to claim 8, and is also substantially identical claim 14 except for differences in claim dependencies. Claim 18 is obvious for the reasons previously presented.

C. Ground 2: Claims 4-5 Are Obvious Over Ground 1 Prior Art + Squibbs

1. Claim 4: "The apparatus of claim 1 wherein at least one of the first device-captured data and the second device-captured data comprises device-captured location coordinates."

2. Claim 5: "The apparatus of claim 1 wherein at least one of the first device-captured data and the second device-captured data comprises: location-identifying information of the corresponding mobile device; and at least one of device-captured image data and device-captured video data associated with a capture location identified by the location-identifying information."

153. Claims 4 and 5, which pertain to location-related information, would have been obvious over Neibauer, Cheng and Ausems in further view of **Squibbs** (**EX1011**). Squibbs describes a technique of recording and displaying data (such as photos) along with the location where the photo was taken. (Squibbs, Abstract.) Squibbs explains that digital cameras that included Global Positioning System (GPS) receivers were known in the art, as were systems that could display the location where the photo was taken on an electronic map. (Squibbs, ¶¶0003-0004.)

154. Squibbs discloses a photo album system that allows a user to record digital images, which can be associated with the geographic location where they were taken. An overview of the system is shown in Figure 3:

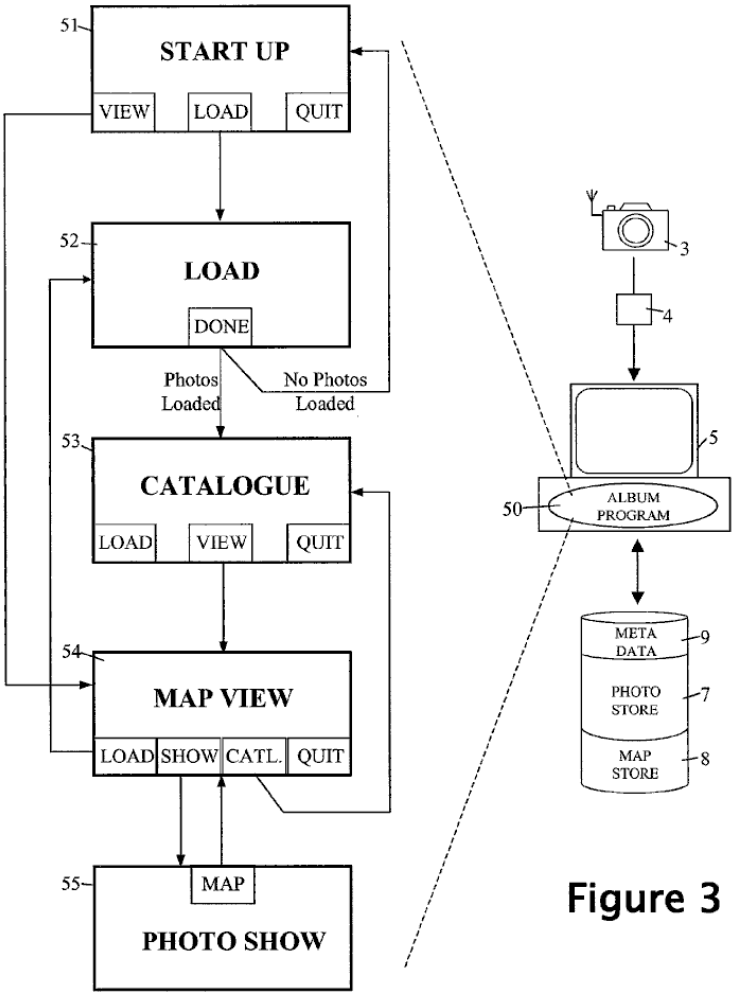


Figure 3

(Squibbs, Fig. 3.) As further explained in Squibbs, with reference to Figure 3:

> FIG. 3 depicts a photo system in which a digital camera **3** provided with location determining means (such as a GPS receiver) is used to generate digital photos **4**, each photo (also referred to as 'image data') **4** being stamped with location data indicating where the photo was taken. Other data may also be associated with each photo, such as a timestamp, a camera ID, and a user ID; such associated data (including the location data) is herein referred to as photo meta data. The photos and their meta data are downloaded by any suitable means (USB connection,

> removable storage device, etc) into a PC **5** where an album program **50** serves to store the photos in a photo store **7** and the photo meta data in a meta-data database **9** (each photo and its meta data being linked by a suitable key associated with both). The album program also has access to a map store **8**. The stores **7** and **8** and the meta-data database can be on the PC or external.

(Squibbs, ¶0031.)

155. Squibbs also discloses an album program **50** as shown in Figure 3 that allows the user to "catalogue, manage, and view their photos through a map-based interface, the photos being represented on a displayed may by a marked indicating the location where they were taken." (Squibbs, ¶0032.) The album program as shown in Figure 3 comprises "five main operating modes **51** to **55**," as shown. (Squibbs, ¶0033.) For example, Load Mode **52** allows the user to download data from camera **3**, and Catalog Mode **53** allows the user to manage newly loaded photos using a map based display, and Map View Mode **54** allows the use to browse the photo album and select photos for viewing. (Squibbs, ¶¶0033, 0035-0036.)

156. Figure 6 shows a display generated by the album program in Catalog Mode **53** (Squibbs, ¶0064):

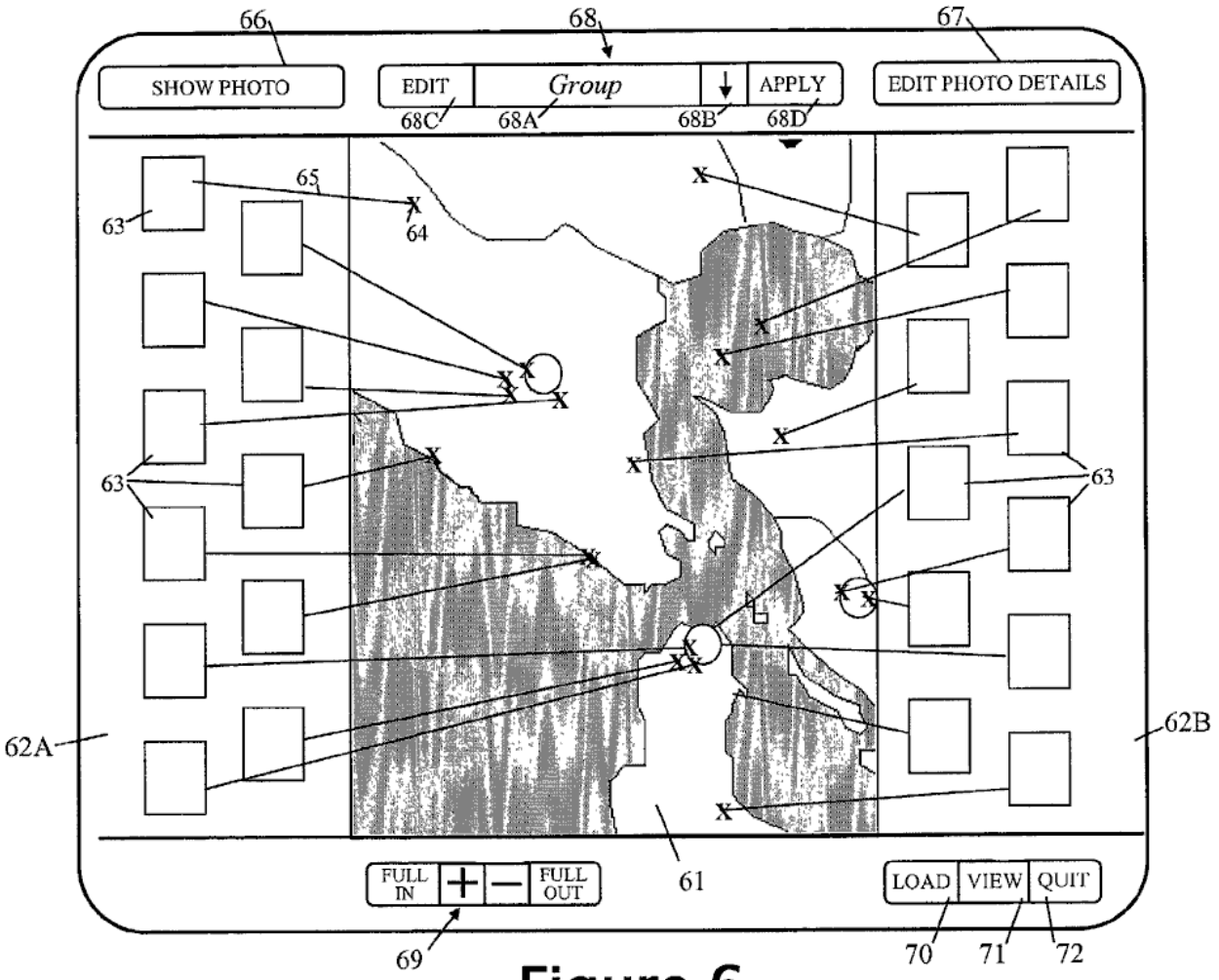


Figure 6

(Squibbs, Fig. 6.)

157. Figure 6 shows a central map area 61 which "is sufficient to encompass the locations registered for the newly loaded batch of photos." (Squibbs, ¶0064.) "A thumbnail **63** of each new photo is shown in one or other of the margin areas **62**A, B and a lead line **65** connects each thumbnail **63** to a corresponding marker 64 showing on the map the location where the photo was taken." (Squibbs, ¶0064.) Figure 6 also shows an upper control bar with, from left-to-right, Show Photo

Control **66** for displaying the photo corresponding to a selected thumbnail **63**, Group Control **68** for creating groups and assigning a photo to one or more groups, and Edit Photo Details Control **67** for displaying and editing the details of a selected thumbnail. (Squibbs, ¶¶0065-0068.) Figure 6 also "includes a zoom control **69** that enables a user to zoom in or out around a particular point on the displayed map." (Squibbs, ¶0071.)

158. Figure 7 shows a display generated by the album program in Map View **54** (Squibbs, ¶0074):

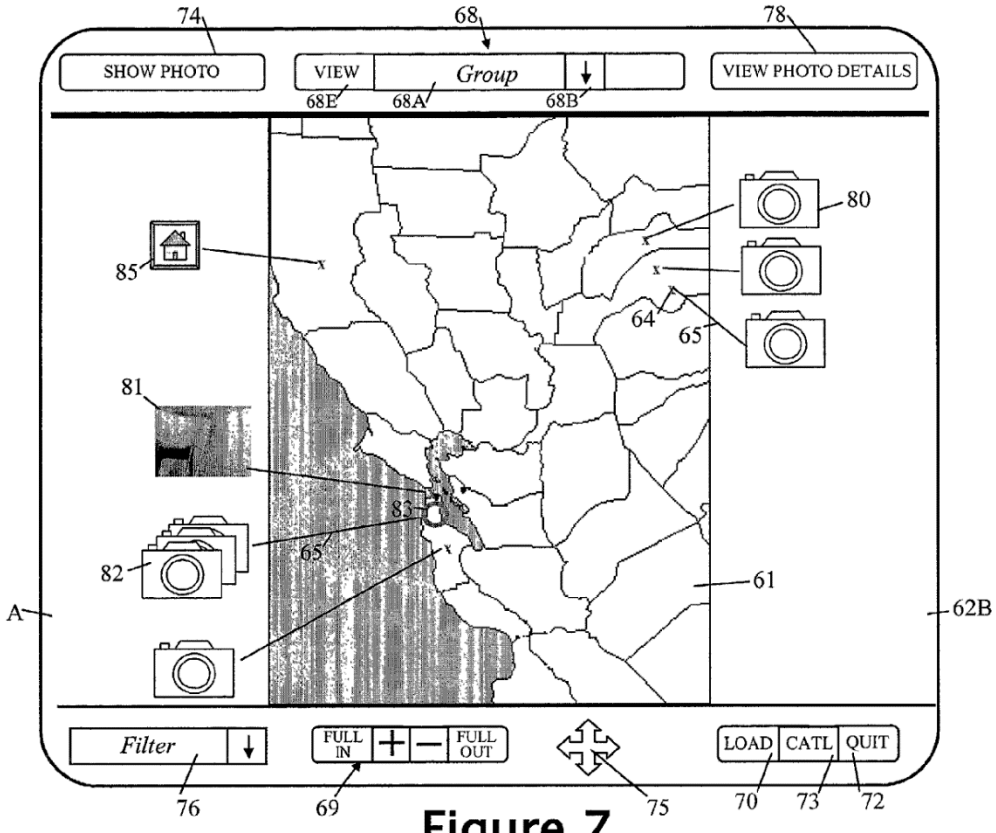


Figure 7

(Squibbs, Fig. 7.)

159. The Map View mode shown in Figure 7 allows a user to browse the album after it has finished editing the photo metadata and assigning the photos to groups. (Squibbs, ¶0074.) Squibbs explains that "[t]he starting map displayed in the Map View Mode is, for example, a world map or a map encompassing the locations of all the photos recorded in the album; alternatively, the map displayed could be the same map as being used in the Catalogue Mode before transiting to the Map View Mode." (Squibbs, ¶0075.) Figure 7 shows photos represented "either as thumbnails **81**, individual photo icons **80**, group icons (see current-abode group icon **85**), or concentration icons (see icon **82**)." (Squibbs, ¶0075.) Squibbs also discloses (in Figure 8) the ability to display a full-size image of a photo selected from the Map View Mode. (Squibbs, ¶0091, Fig. 8.)

160. Squibbs discloses a number of ways in which a photo can be associated with location data. In the example above shown in Figure 3, the digital camera itself has a built-in GPS receiver. In another embodiment shown in Figure 11, a digital camera **90** transmits the photo image data to a cell phone **20**, which in turn uploads the image data over a cellular connection to service system **40** for storage on network store **43**. (Squibbs, ¶0101, Fig. 11 (showing transfer **105**); *see also id.*, ¶0031 (noting that the photo store can be "external").) The cell phone, concurrently with the upload of photo image data, also transmits location information associated with the photo

image data. (Squibbs, ¶0101.) Squibbs explains that the cell phone can determine location information in a number of ways, including from "a location server of the mobile radio infrastructure," or using "a GPS system built into the cell phone." (Squibbs, ¶0098; *see also id.*, ¶0101.)

161. ***Rationale and Motivation to Combine (Ground 1 Prior Art with Squibbs)***: It would have been obvious to combine the prior art for **Ground 1** with Squibbs, predictably resulting in the system and method under the proposed combination in which the first or second device-captured data of claim 1 "**comprises device-captured location coordinates**" (claim 4) or "**location-identifying information of the corresponding mobile device**" (claim 5). Under this combination, when a club member uploads a photo to a club using the club photo sharing feature, the mobile device would not only upload the photo image obtained from a digital camera, but also would have transmitted geographic location information associated with the photo.[3] The "**device-captured data**" thus would

[3] Although not relevant to the limitations of claims 4-5, Squibbs discloses a digital camera that is separate from a cellular phone used to upload photo image data. (Squibbs, Fig. 11, ¶0101.) As explained for claim 1**[c]**, the ability to incorporate

have comprised, as recited in claim 5, "**at least one of device-captured image data… associated with a capture location-identifying information**." (Squibbs, Fig. 4 (showing "LOCATION COORD" field for photo), ¶0049 (referring to "the coordinates provided by the location data").) Although not required by claims 4-5, under the proposed combination, it would have been obvious to adapt the club photo sharing feature in Neibauer to further display location information associated with photos uploaded by club members, for example, via a map-based user interface similar to the one described in Figures 6-7 of Squibbs discussed above. This would have been seen as a natural extension of the features already disclosed in Neibauer. For example, Neibauer expressly discloses Yahoo! Maps, a service for providing users with electronic maps based on a user-specified location, and for obtaining driving directions. (Neibauer, pp.222-224, 229-232.)

162. Squibbs is an analogous reference in the same field as the '348 patent that discloses similar functionality for managing information with wireless networking capabilities, such as location information. Squibbs would also have been

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digital cameras into mobile devices was already known in the art and disclosed by Ausems. Ausems also discloses that such devices could also incorporate GPS and mapping capabilities. (Ausems, 5:38-47.)

reasonably pertinent to problems facing the patent inventors, including how to obtain location information and incorporate that information into a mobile information channel – a feature of the alleged invention. ('348, 6:12-17.)

163. An ordinarily skilled artisan would have been amply motivated to combine in order to improve the experience club members who use the club photo sharing feature described in Neibauer. The ability to associate a location with a digital photo would have provided a clear benefit to the club photo sharing feature of Neibauer by improving the classification and enjoyment of uploaded photos. Squibbs itself explains that classification of photos "has long been a problem due to the effort involved in maintaining any organisation of the photos." (Squibbs, ¶0002.) Geographic location information would not only have provided a clear way to classify digital photos, but the location would have allowed club members to better understand the context behind the photo. The location information would also have provided a valuable tool for identification of objects in the photo; for example, a club member might mistakenly believe a particular photo of the Statue of Liberty was taken in New York when it was actually taken from one of the versions of that statute in Paris, France, and location-information provided with the photo could have clarified that point for the user. And as noted above, Neibauer provides a further express motivation to combine with Squibbs by disclosing a Yahoo! Maps feature

that allows users to request and obtain electronic maps. (Neibauer, pp.222-224.) Neibauer further describes how a user can annotate a map to identify objects of interest on the map, such as the user's house and the location of an upcoming picnic. (Neibauer, pp.226-228, Fig. 10-5 (showing "My House" and "The picnic is here").) The annotation described in Neibauer is similar to the thumbnail view in Squibbs, as discussed above. In any case, the fact that Neibauer already discloses the ability to display electronic maps, and suggests annotating those maps to show the location of events, confirms that Neibauer and Squibbs are naturally combinable, and that an ordinarily skilled artisan would have been motivated to do so.

164. An ordinarily skilled artisan would also have had a reasonable expectation of success. Squibbs explains that, even prior to Squibbs, the ability to determine current location (via GPS or mobile radio infrastructure) was known, as was the ability to associate and display location information with photos. (Squibbs, ¶¶0003-0005, 0098, 0142.) The user interface techniques described in Squibbs for presenting a map-based display of photos would have involved conventional programming techniques. An ordinarily skilled artisan would have found the disclosures of Squibbs sufficiently detailed to implement the techniques on which I rely, without undue experimentation.

D. Ground 3: Claims 10-11, 15-16, 19-20 Are Obvious Over Ground 1 Prior Art + McElfresh

165. Dependent claims 10-11, 15-16, and 19-20 are substantially similar, differing primarily in that claims 10-11 depend from claim 1, claims 15-16 depend from claim 13, and claims 19-20 depend from claim 17. These claims all recite the ability to identify and periodically obtain data from "**at least one data feed**," which is integrated into "**a given set of shared information content of the web-based shared information channel**," accessible to the first sand second users via their respective mobile devices and personalized content applications. Dependent claims 11, 16, and 20 further state that the "**data obtained from the given identified data feed comprises at least one advertisement**." These claims are obvious over the prior art for **Ground 1** with **McElfresh**.

166. McElfresh describes a technique for integrating advertisements into a webpage. Figure 1 shows a prior art technique for arranging a number of ads on a particular webpage:

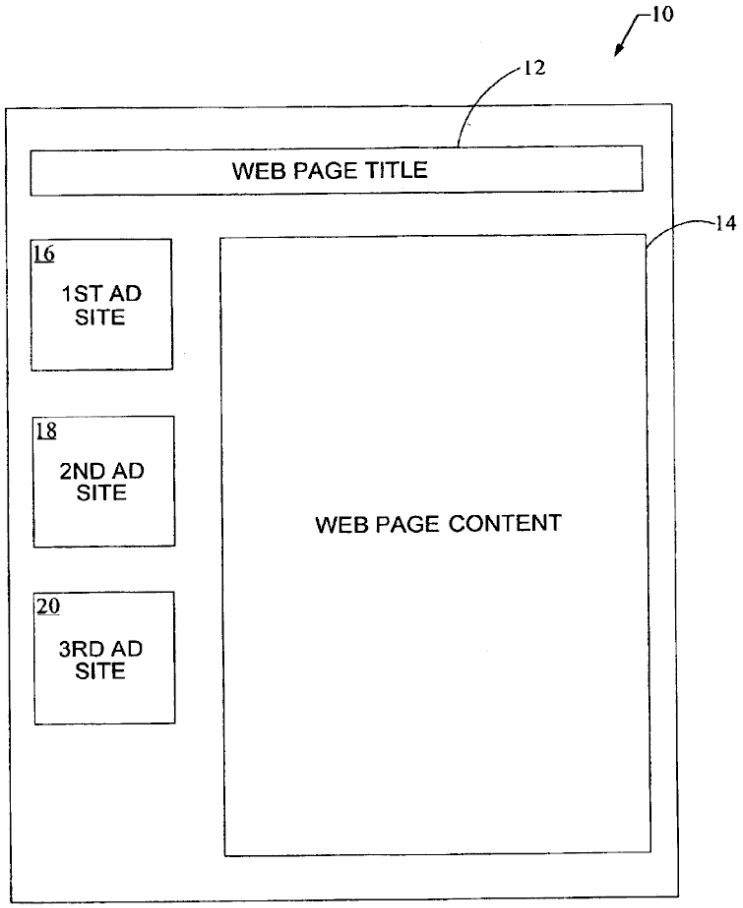


Fig. 1
(Prior Art)

(McElfresh, Fig. 1.)

167. Figure 1 shows "a generalized block diagram layout of a prior art webpage **10**. This page contains a web page title block **12**, and a web page content block **14**. A sequence of ad sites **16-20** are shown which receive and display ads configured to fit in these spots." (McElfresh, 5:19-31.) McElfresh explains that ads in the prior art were typically placed on the page based on advertisers' preferred page location, or randomly. (McElfresh, 5:33-38.)

168. McElfresh purports to disclose an improved technique in which a website can issue a request for ads for inclusion on a webpage, and the ads provided will be selected and ranked in a way that increases the likelihood of click-throughs and maximizes advertising revenue. (McElfresh, 5:20-28.) Figure 3A shows a block diagram of the system or network **100** for optimizing ad placement:

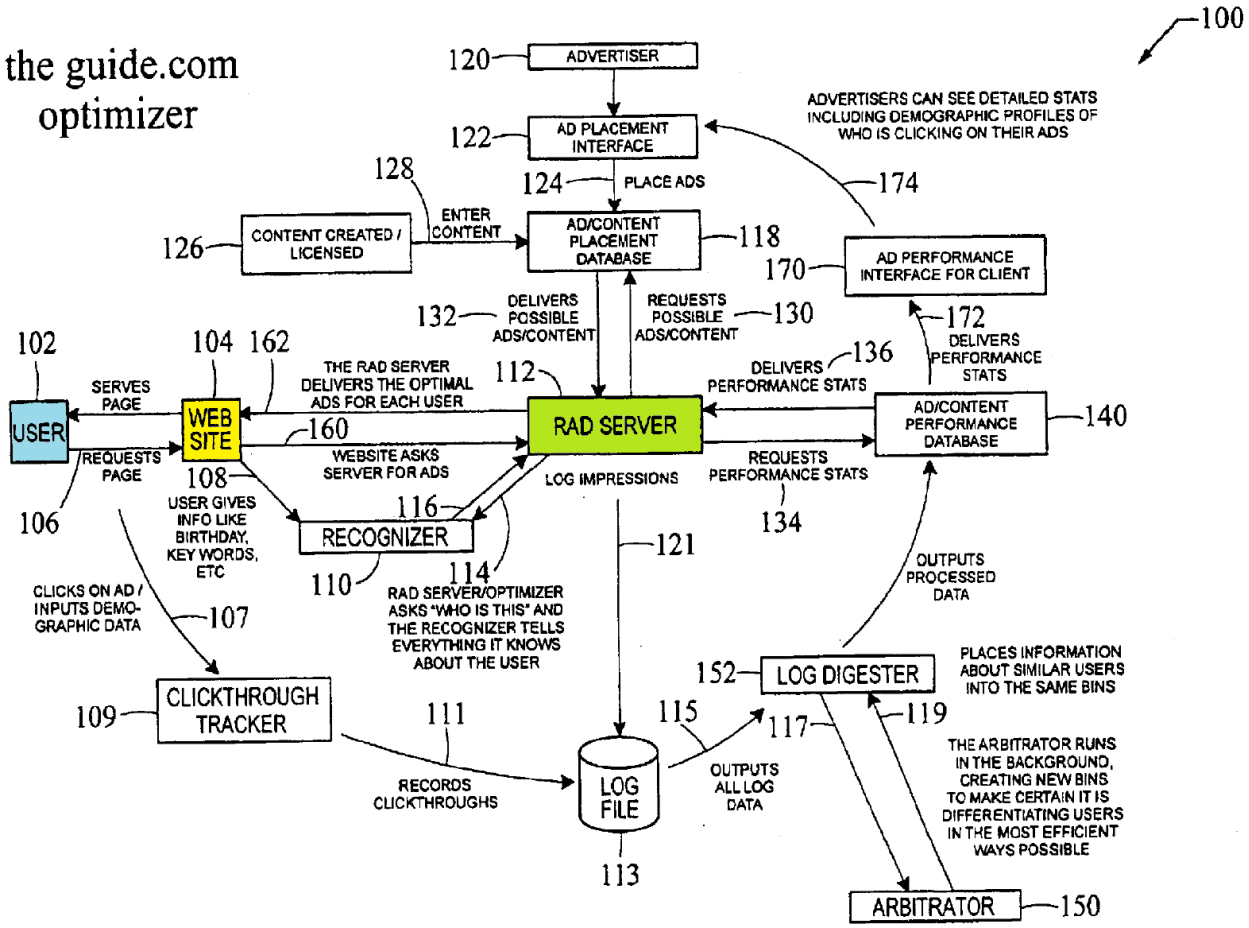


Fig. 3A

(McElfresh, Fig. 3(a) (highlighting added), 6:15-18.) Although Figure 3A above

shows a number of components, the most relevant aspects for purposes of my declaration are Rad Server **112**, website **104**, and user **102**.

169. McElfresh explains that "when a site wants to show a page, it contacts an ad server component **112**, shown at the center of the network **100** in FIG.3(a). This device might also be referred to as a relational server component, and is hence referred to as the Rad Server." (McElfresh, 6:36-40.) Figure 3(a) also discloses "an ad/content placement database **118**… for storing a plurality of ads, which might be used for possible display." (McElfresh, 6:57-60.) The ad server or Rad Server **112** "performs the overall function of gathering the necessary information regarding a particular ad (or set of ads) and the particular user and generating a set of ads which have been optimized for placement on a webpage," based on (among other things) calculated click-through-percentage rates. (McElfresh, 6:42-48.)

170. After the ads have been selected, "the Rad Server **112** delivers a set of ads for display to the user which have been optimized for increased click-throughs, and/or increased revenue generation for the webpage provider." (McElfresh, 8:10-14.) In another embodiment, "[i]f an advertiser wishes to purchase the right to an entire section of the website or webpage, the ads can simply be placed there without having to compete their way into that position on the page." (McElfresh, 12:50-54.)

171. ***Rationale and Motivation to Combine (Ground 1 Prior Art +***

McElfresh): It would have been obvious to combine the prior art for **Ground 1** with McElfresh, predictably resulting in the proposed combination with the further ability to integrate a number of ads onto the webpage of the photo sharing feature.

172. For example, claim 10, 15 and 19 recite the steps or functions of identifying "**at least one data feed**," and periodically obtaining data "**from a given such identified data feed**." Under the proposed combination, the "**data feed**" would have corresponded to a feed containing a plurality of advertisements available for placement and display on the webpages of the club photo sharing feature, the advertisements obtained by the website in Neibauer from Rad Server **112** as described in McElfresh. More specifically, the web server providing the club photo sharing feature described in Neibauer ("**web-based shared information channel**") would have periodically obtained ad data from this feed, for example, when webpages of the club sharing photo sharing feature are being prepared for delivery to a user. (McElfresh, 6:36-48, 8:9-10 ("Referring again to FIG. 3(a), the website **104** requests ads from the Rad Server **112** as shown by dataflow **160**.").)

173. The '348 patent does not define "**data feed**," and the term does not appear in the written description. The term "**feed**" appears only in one sentence along with a list of exemplary types of data sources. ('348, 9:52-55 ("The data integration suite **36** includes extensible markup language (XML) and/or rich site

summary (RSS) feeds **60**, database and/or file **61**, syndication services b, device-captured data **63**, web services **64**, and other data sources **65**.").) I understand that Patent Owner has cited this sentence to argue that "**data feed**" is not limited to XML or RSS feeds and simply means a "*provision of information*," to the extent a construction is required. McElfresh clearly satisfies this definition as it discloses a technique for providing advertising information to a website.

174. I understand Petitioner has argued that "**data feed**" is limited to the two examples in the written description, *i.e.*, an XML or RSS feed. The claimed data feed would be obvious even if it were limited in this fashion, because it would have been obvious to provide the advertisements from Rad Server **112** of McElfresh to the website in XML format. XML, which stands for eXtensible Markup Language, was a well-known industry standard. As explained in U.S. Patent No. 6,874,146 to Sridhar Iyengar (**EX1019**), filed in June 1999 and cited to support the general knowledge of an ordinarily skilled artisan and to support a motivation to combine, "XML, the Extensible Markup Language, is a new format designed to bring structured information to the Web. It is a Web-based language for electronic data interchange. XML is an open technology standard of the World Wide Web Consortium (W3C), which is the standards group responsible for maintaining and advancing HTML and other Web-related standards." (Iyengar, 2:11-17.) "XML is

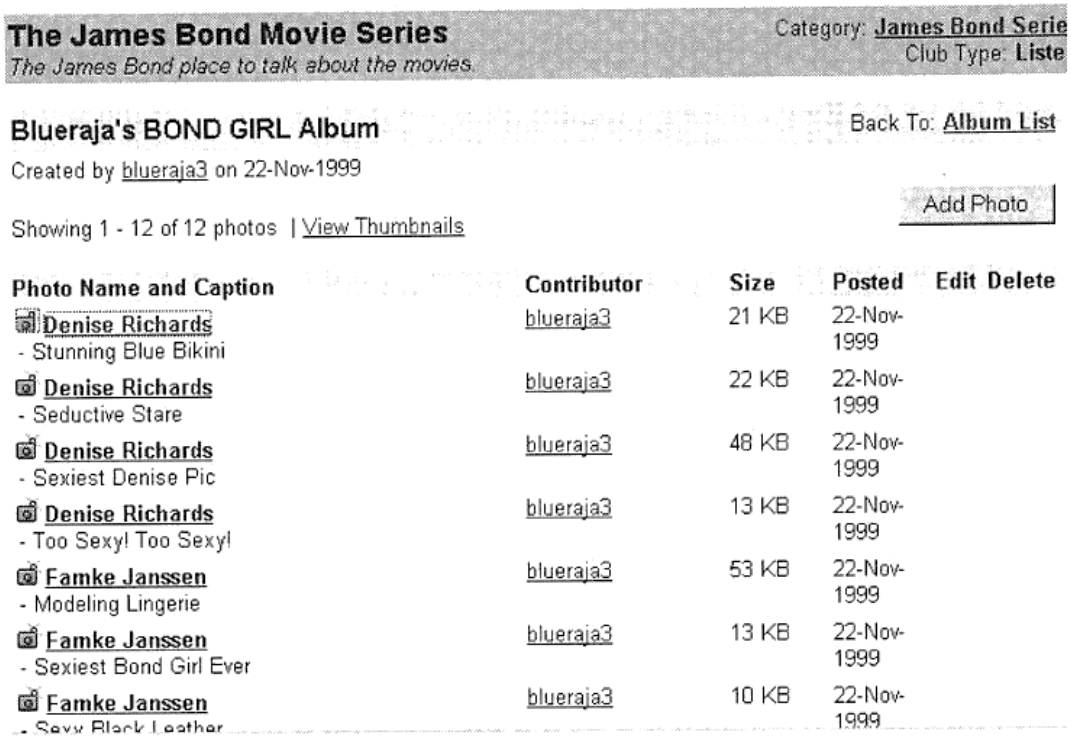
widely believed to be the next step in the evolution of the Web," and as of Iyengar's filing (which was three years before the earliest priority date of the '348 patent), "[e]xample application domains include Web commerce, publishing, repositories, modeling, databases and data warehouses, services, financial, health care, semiconductors, inventory access, and more." (Iyengar, 2:39-40, 2:45-49.) "XML is gaining widespread acceptance as the de facto standard for representing structured information in the context of the Worldwide Web and beyond." (Iyengar, 2:50-51.)

175. It therefore would have been obvious that the advertising data from the data feed in McElfresh could have been provided to the website under the proposed combination in XML format, thus rendering obvious an XML data feed that provides advertising information. An ordinarily skilled artisan would have been motivated to do this to take advantage of a growing and popular XML industry standard which was specifically designed for electronic data interchange between various systems. In fact, U.S. Patent No. 6,311,185 B1 to Robert E. Markowitz, filed on October 30, 1997 (**EX1020**), specifically discloses sending advertising information between systems using XML. (Markowitz, 4:49-50 ("These 'candidate' advertisements could be sent using extended Markup Language (XML) defined tags.").)

176. Claims 10, 15, and 19 further state that the information obtained from the data feed is integrated "**with the first and second device-captured data into a**

persistent version of a given set of shared information content of the web-based shared information channel so as to be accessible with the first and second device-captured data to the first and second users of the respective first and second mobile devices via the respective personalized content applications of the first and second mobile devices." This would have occurred, under the proposed combination, by integrating the received advertisements into the webpages for the club photo sharing feature, for example, by showing the ads on the photo album webpages in Neibauer, which would have been accessible to club members via their mobile devices.

177. For example, as explained for claim 1, the first and second device-captured data is integrated into a photo album as shown in the photo album view shown in Figure 21-10 of Neibauer:



The James Bond Movie Series Category: James Bond Serie
The James Bond place to talk about the movies. Club Type: Liste

Blueraja's BOND GIRL Album Back To: Album List

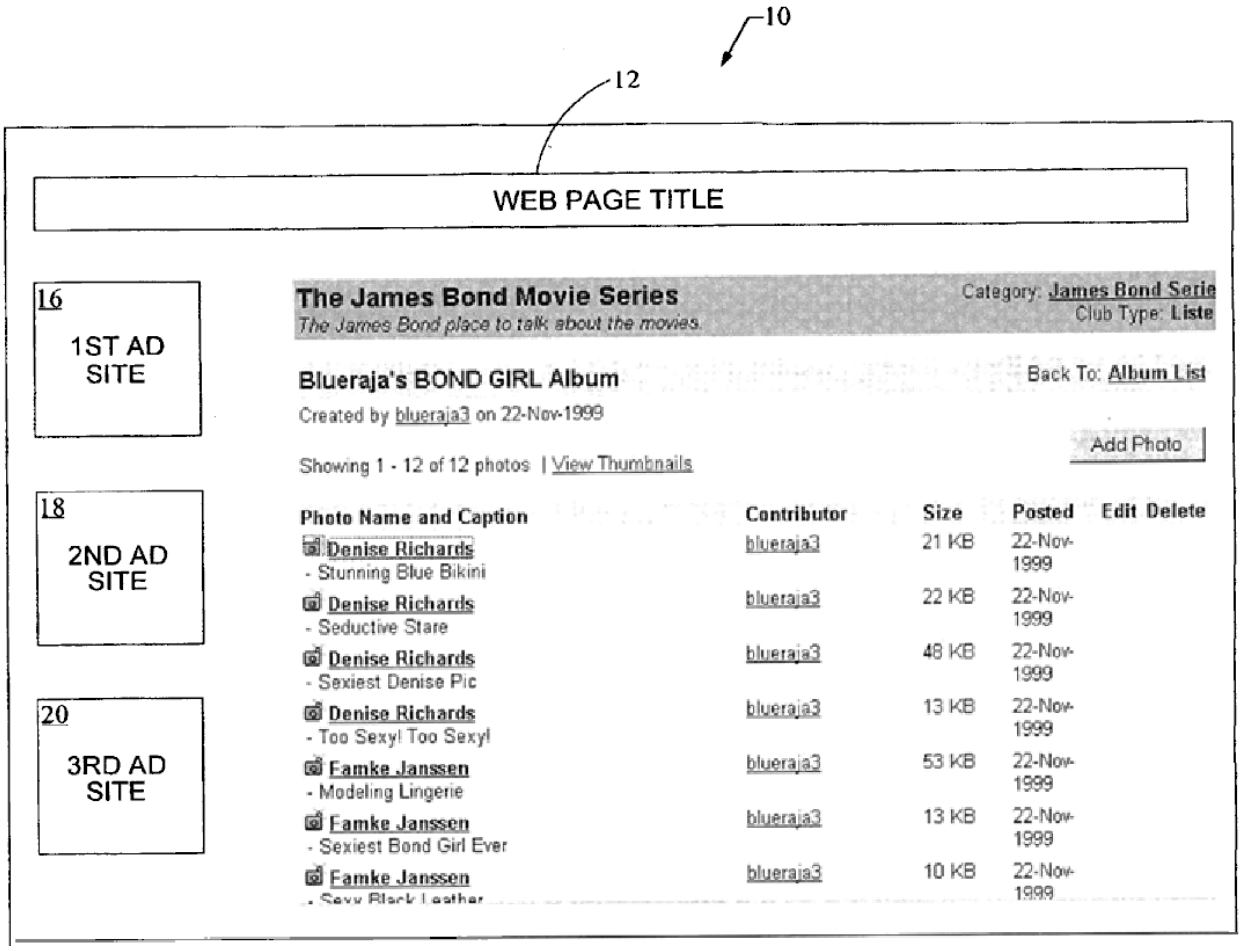
Created by blueraja3 on 22-Nov-1999

Showing 1 - 12 of 12 photos | View Thumbnails Add Photo

Photo Name and Caption	Contributor	Size	Posted	Edit	Delete
Denise Richards - Stunning Blue Bikini	blueraja3	21 KB	22-Nov-1999		
Denise Richards - Seductive Stare	blueraja3	22 KB	22-Nov-1999		
Denise Richards - Sexiest Denise Pic	blueraja3	48 KB	22-Nov-1999		
Denise Richards - Too Sexy! Too Sexy!	blueraja3	13 KB	22-Nov-1999		
Famke Janssen - Modeling Lingerie	blueraja3	53 KB	22-Nov-1999		
Famke Janssen - Sexiest Bond Girl Ever	blueraja3	13 KB	22-Nov-1999		
Famke Janssen - Sexy Black Leather	blueraja3	10 KB	22-Nov-1999		

FIGURE 21-10 Club photo album

(Neibauer, p.478, Fig. 21-10.) Figure 21-10 as noted above shows a partial list of photographs stored in an album. For each photo ("**device-captured data**"), is listed along with a link to the photo itself. (Neibauer, p.477.) Under the proposed combination, the information on this webpage would have been integrated with advertisements obtained from the claimed "**data feed**" under the combination with McElfresh. I created the following mock-up, based on the combination of Figure 1 of McElfresh and Figure 21-10 of Neibauer to illustrate one obvious user interface in which this combination would have been implemented:



178. I note that my hypothetical above is entirely consistent with Neibauer, which shows an exemplary club page with an advertisement placed on it:

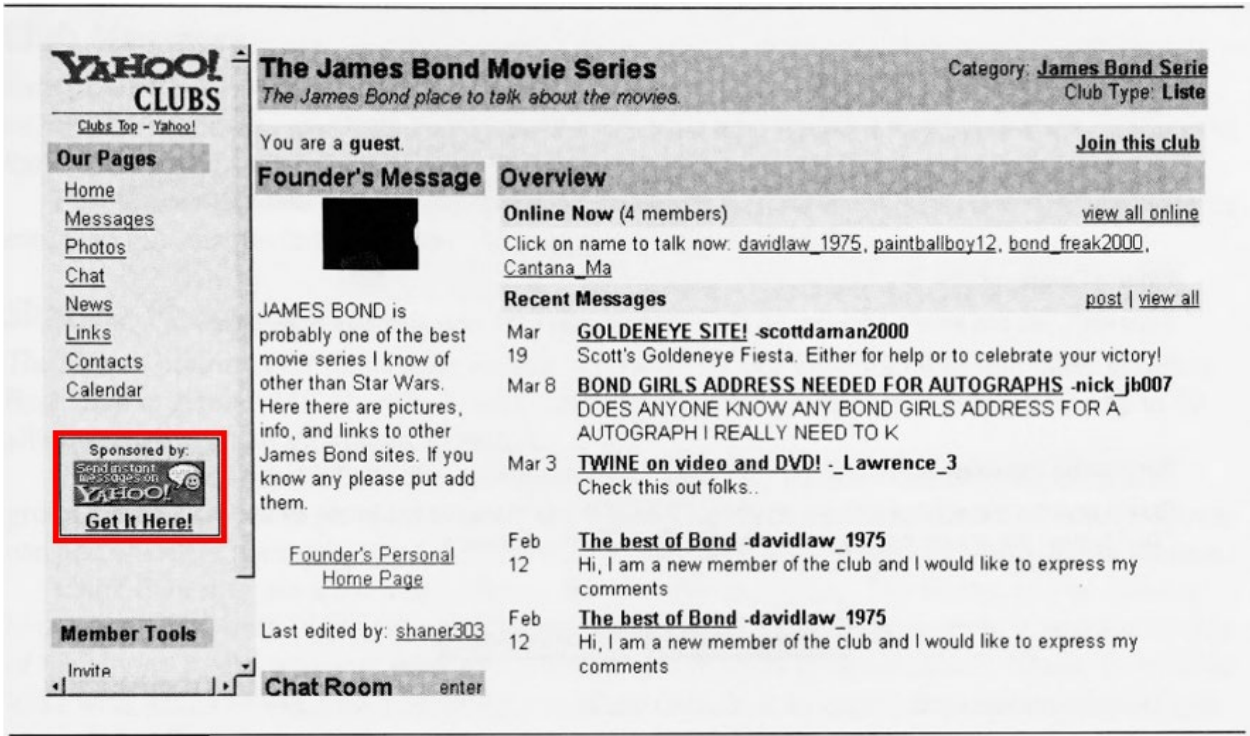


FIGURE 21-8 Club page

(Neibauer, p.475, Fig. 21-8 (red box added).)

179. Under the proposed combination, therefore, advertisement information obtained from the "**data feed**" would have been integrated "**with the first and second device-captured data**," *i.e.*, the photo data provided by the first and second users as explained in claim 1, "**into a persistent version of a given set of shared information content of the web-based shared information channel**," *i.e.*, a persistent set of data that includes the photo data for the photo album provided by the users and the obtained advertisements, which would have been accessible to and shared with club members. It would also have been obvious for this set of information to be "**persistent**," as McElfresh discloses dynamic advertising

algorithms can be overridden such that an advertiser can simply "purchase the right to an entire section of the website or webpage," such that "the ads can simply be placed there without having to compete their way into that position on the page." (McElfresh, 12:50-54.) It therefore would have been obvious that the ads, along with the photo data for the photo album, would have been persistent and accessible to both the first and second users through their respective mobile devices/personalized content applications, under the combination with Cheng. And finally, claims 11, 16, and 20 recite that "**the data obtained from the given identified data feed comprises at least one advertisement**," which would have been the case as described above.

180. McElfresh is an analogous reference. The '348 patent describes its "Field of the Invention" as relating generally to "network-based communication systems, and more particularly to techniques for information content management in such systems." ('348, 1:29-31.) McElfresh is an analogous reference in the same field as the '348 patent that discloses similar functionality for managing information content accessible through the Internet, and would have been reasonably pertinent to problems facing the inventors including how to implement a web-based system that incorporated advertisements.

181. An ordinarily skilled artisan would have been amply motivated to

combine in order to increase revenue. As noted above, Neibauer discloses the ability to place advertisements on club pages. (Neibauer, p.475, Fig. 21-8.) The techniques of McElfresh would have provided a clear benefit by allowing the photo sharing webpage to display multiple advertisements on a single page, from multiple third party advertisers, further increasing the potential revenue obtainable by the displaying website. As McElfresh explains, "the generation of revenue from a website is proving to be increasingly important, as there are costs inherent in creating, providing, and maintaining a website." (McElfresh, 1:30-34.) "Moreover, as Internet traffic continues to increase, the opportunities for the generation of revenue in association with those contacted sites tends to increase." (McElfresh, 1:34-36.) Under the combination with McElfresh, the proposed combinate would have beneficially been enabled to deliver more advertisements per page, thus resulting in greater revenue generation for the website operator.

182. An ordinarily skilled artisan would also have had a reasonable expectation of success, as the techniques of McElfresh that I have applied would have involved nothing more than basic web and network communications techniques. An ordinarily skilled artisan would have found the disclosures of Neibauer and Cheng sufficiently detailed to implement the techniques on which I rely, without undue experimentation.

E. Grounds 4-6: Obviousness in Further View of Harvey.

183. Grounds 4-6 are substantially the same as Grounds 1-3, except that they add **Harvey** (**EX1010**) to account for a narrower construction of "**web-based shared information channel**" that was proposed in the pending litigation. As explained for Ground 1, claim 1**[a]**, Petitioner has argued in the pending litigation that "**web-based shared information channel**" should be construed (based on a construction from a prior litigation involving a related patent) as "*a virtual location at the content management site at which user-authored content may be added for transmission to the mobile web site*." I understand that Patent Owner does not agree that this construction is appropriate. In any case, the key feature of this construction, for our purposes here, is the ability of user-authored content to be added "at a content management site," which Petitioner has defined in the pending litigation as "*a web site that allows a user without programming to create and manage content on a mobile web site, or a portion thereof*." The "*content management site*," for purposes of these grounds, corresponds to the website for creating a new Yahoo! club based on the proposed combination, and the "*mobile website*" to the Yahoo! club made available to club members via mobile devices, under the proposed combination with Cheng. With respect to the requirement that the "content management site" permit the user to add "user-authored content," this would have been obvious in further

view of Harvey. With respect to all other claim limitations in the challenged claims, my analysis from **Grounds 1-3** applies here.

184. Harvey discloses techniques for allowing users to create on-line communities in which users can communicate and share information. In one exemplary embodiment, Harvey discloses an on-line community that is very similar, in terms of its purpose and features, to the type of web-based clubs disclosed in Neibauer:

> A creator accesses a central controller over a network to create a community using a community creating module. In this example, the title of the community is "The William Henry Harrison Historical Preservation Society." The community creating module permits the creator to create a community, and designate applications and content presented. in the community by a user interface. The applications in the present example include a chat application object for users to interact with each other in chat format, a schedule application object for scheduling appointments for the events, a pledge application object for pledging a donation, a photo album application object for viewing photos related to William Henry Harrison, and other application objects. Content in the present example includes information about upcoming fund raising events and meetings for the Society, information about current funds collected, biographical information about William Henry Harrison, and other information. Different applications may provide different levels of interaction between a user, other users, and

the central controller module.

(Harvey, 4:24-43.)

185. The key feature of Harvey, for our purposes here, is its disclosures of a community creator being able to add content to a community before the community is created and launched. As noted, Harvey explains that "[t]he community creating module permits the creator to create a community, and designate applications and content presented in the community by a user interface." (Harvey, 4:28-30.) More specifically, a user can access a creating module **165** in order to create a new community, which may include web-based community creation. (Harvey, 7:49-54, 7:55-56 ("According to another embodiment of the invention, community creation may comprise a web-based creation.").) "A creator accesses community creating module **165** through a central controller module **115** at step **200** [of Figure 2]." (Harvey, 8:49-50.) "At step **202**, a creator provides community identification information," such as a community name. (Harvey, 7:58-61.) "At step **210**," Harvey explains, "a configuration editor is presented to a creator. A configuration editor may allow a user to build a community, designate content and application objects, subscribe to subscription objects, and add other information associated with the community." (Harvey, 8:63-67; *see also id.*, 9:41-47 ("Options may include… creating specific content….").) Later, "[a]t step **230**, a creator may launch a

community." (Harvey, 12:67-13:1.) A user can establish a connection with a community, among other ways, "through browser access to an appropriate website." (Harvey, 29:59-62.)

186. ***Rationale and Motivation to Combine (with Harvey)***: It would have been obvious to combine the prior art cited for **Grounds 1-3** with Harvey, predictably resulting in the club system under the proposed combination, with the further ability of the club founder being able to add content to one or more web-based shared information channels. For example, in one exemplary and obvious embodiment of the proposed combination, the web-based club creation interface under the Neibauer combination would have further allowed the club founder to add content to one or more mobile information channels, such as by adding photos to the photo sharing feature or club message board, before the club is created and launched.

187. This would have satisfied Petitioner's proposed construction of "**web-based shared information channel**" as "a virtual location at the content management site at which user-authored content may be added for transmission to the mobile web site." Under the proposed combination, therefore, the "content management site" would have included the web-based interface for allowing the founder to create a club disclosed in Neibauer, and that interface would have further permitted the club founder to add content for the club, such as initial club messages,

initial photos, and so forth. This information would have been made available for transmission to "the mobile website," i.e., the club site as delivered to mobile users, on the club page itself.

188. Harvey is an analogous reference. The '348 patent describes its "Field of the Invention" as relating generally to "network-based communication systems, and more particularly to techniques for information content management in such systems." ('348, 1:29-31.) Harvey, like Neibauer described for **Ground 1**, is an analogous reference in the same field as the '348 patent as it discloses similar functionality for managing information content accessible through the Internet, through a series of information channels that provide the ability to exchange messages and collaborate among multiple users. Harvey would also have been reasonably pertinent to problems facing the patent inventors, including how to implement a web-based system for managing information content and making that content available to users over the Internet.

189. An ordinarily skilled artisan would have been motivated to combine in order to provide greater customizability to the clubs created under the proposed combination. This is because the club creator, under the proposed combination, would have been able to use the club-creation interface to populate the mobile information channels with initial content, before the club is launched and made

available to other members. This would have allowed the club founder to ensure that other members would not experience a "blank" club devoid of content, because under the proposed combination, the club founder could have populated its mobile information channels (such as the club message board) with at least some initial content, thus providing a more engaging club experience for other members, featuring content available from the moment of the club's creation.

190. An ordinarily skilled artisan would also have had a reasonable expectation of success. The features that I rely upon in Harvey, namely the ability to allow content to be added to mobile information channels through the club creation interface, involved nothing more than straightforward web programming techniques using standard technologies such as HTTP, HTML, and could have been implemented using off-the-shelf web browser and web server software. An ordinarily skilled artisan would have found the disclosures of Harvey sufficiently detailed to implement the techniques on which I rely, without undue experimentation.

VI. NO SECONDARY CONSIDERATIONS OF NONOBVIOUSNESS

191. As explained in **Part III.B**, I understand that "secondary considerations" may be used as indicia of nonobviousness, provided that any such consideration has a nexus to the invention claimed. I understand from Petitioner's

counsel that Patent Owner in the related district court litigation has not yet identified any evidence related to secondary considerations with a nexus to the claimed invention. Nor am I aware of information, such as commercial success, unexplained results, long felt but unsolved need, industry acclaim, simultaneous invention, copying by others, skepticism by experts in the field, and failure of others, suggesting that the claims addressed in this Declaration are not obvious. To the extent Patent Owner later provides information it claims relates to secondary considerations, I reserve the right to supplement my analysis and opinions to comment on it.

VII. CONCLUSION

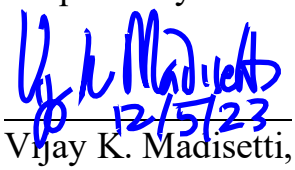
192. In signing this Declaration, I recognize that the Declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I also recognize that I may be subject to cross-examination in this proceeding. If required, I will appear for cross-examination at the appropriate time. I reserve the right to offer opinions relevant to the invalidity of the challenged claims at issue and/or offer testimony in support of this Declaration.

193. I hereby declare that all statements made herein of my own knowledge are true and that all statements are made on information and belief are believed to

be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001.

Dated: December 5, 2023

Respectfully submitted,



Vijay K. Madisetti, Ph.D.
Johns Creek, GA

EXHIBIT A

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Employment:

- 1989-present: Full Professor of Cybersecurity & Privacy, and Electrical & Computer Engineering (**Georgia Tech, Atlanta, GA 30332**).

Areas of Technical Interest – Topics in Computer Science, Electrical Engineering, and Computer Engineering.

Education: PhD (EECS, University of California at Berkeley, 1989), **B.Tech** (Hons) in Electronics and Electrical Communications Engineering (Indian Institute of Technology, Kharagpur, 1984).

Startup Companies:

Director, **VP Technologies, Inc**. (1995-): A startup commercialized through Georgia Tech's Advanced Technology Development Corporation (ATDC) focusing on digital software and hardware design services for military market. http://www.vptinc.net

Director, **Soft Networks, LLC** (2001-2007): A startup commercialized through Georgia Tech support focusing on software development tools and compilers for Cellular/WiFi/VOIP/telecommunication products. http://www.soft-networks.com

Director, **Elastic Video Inc.** (2007- 2009): A startup commercialized through Georgia Tech's VentureLab (http://venturelab.gatech.edu) development image and video processing software for wireless & IP networking.

Litigation Experience (2016-2023) With Testimony

(Note: There may be multiple cases between the parties, e.g., District Court v. ITC, US versus Foreign Cases)

Chrimar v. Adtran, Alcatel, et al.
Technology: Power over Ethernet (2015-2017)
Submitted reports & Deposition & Trial

Chamberlain v. Ryobi/TTI
Case No: 1:16-cv-06097 (ND Illinois)
Expert for Ryobi
Technology: Wireless/IoT/Barrier Movement (2016 – 2019)
Submitted reports & deposition & trial testimony

IOEngine v. IMC/Imation
Case No: cv-14-1572-GMS (US Delaware)
Expert for IMC/Imation
Technology: Networked Storage Device (2016-2017)
Submitted reports & deposition & trial testimony

Huawei v. Samsung
Case No: 3:16-cv-2787-WHO (ND Cal)
Expert for Samsung
Technology: 4G/LTE Random Access Protocols (2016-2019)
Submitted reports & deposition

Hitachi Maxell v. ZTE/Huawei
Case No: 5:16-cv-00178-RWS (ED Texas)
Expert for Hitachi Maxell
Technology: Digital Cameras
Submitted reports & deposition (2017 – 2018)

Hitachi Maxell v. Apple
Case No: 5:19-cv-00036-RWS
Expert for Hitachi Maxell
Technology: Digital Cameras
Submitted Expert Reports (2020-)

Qualcomm v. Apple
Case No: 17-ccv-0108-GPC-MDD (SD Cal) Also, Related ITC/FTC Matters
Expert for Qualcomm
Technology: 4G/Wireless Communications/Smartphones (2017-2019)
Submitted Reports and Deposition

Qualcomm v. Apple
Case No: 3:17-cv-01375-DMS-MDD (SD Cal)
Expert for Qualcomm
Technology: 4G/Wireless Communications/Smartphones (2017-2019)
Submitted Reports and Deposition

Optis v. Huawei
Case No: 2:17-cv-123 (E.D. Texas)
Expert for Optis Wireless
Technology: 4G/Video (2017-2019)
Submitted reports & deposition

Beckman Coulter v. Sysmex
Case No: 1:17-cv-24049-DPG (ND Illinois)
Expert for Sysmex
Technology: Medical Instrumentation Automation (2017-present)
Testifying Expert

TQ Delta v. Xyxel/Adtran
Expert for TQ Delta
Technology: DSL Technologies (2018-present)
Testifying Expert

3GL/KPN v. LG, Blackberry, HTC
Expert for 3GL/KPN
Technology: 4G/LTE Protocols (2018-present)
Reports and Deposition / Testifying Expert

Rovi v. Comcast
ITC No. 337-TA-1103 (ITC)
Expert for Rovi
Technology: Digital Video & interactive GUI (Jan 2018-May 2018)
Reports and Deposition

Cirba/Densify v. VMWare
Case No: 1:19-cv-00742-LPS
Expert for Cirba/Densify
Technology: Virtualization (2019-present)
Reports Deposition/PI Hearing / Testifying Expert, Trial

Power Integrations v. On Semiconductor
Case No: 17-cv-03189-BLF
Expert for On Semiconductor
Technology: Power Electronics (2018-2019)
Reports & Deposition/Testifying Expert.

Pathway v. Lumens, IPEVO, Aver JDA
Case No: ITC 337-TA-1045
Expert for Lumens JDA
Technology: Document Cameras (2016-2019)
Reports & Deposition (for IPR/ITC, no trial)

Wilan v. Apple
Case No: 3:14-cv-2235
Expert for WiLan
Technology: Voice over LTE/LTE Protocols (2017-2020)
Reports and Testified through Deposition/Trials

St. Lawrence Comm. v. Amazon
Case No. 2:19-CV-00027-JRG
Expert for Amazon
Technology: Multimedia Codecs
Submitted Expert Reports/Deposition (2020-2020)

PanOptis v. Apple
Case No. 2:19-CV-00066-JRG
Expert for PanOptis
Technology: LTE
Submitted Expert Reports/Deposition/Trial (2019-2020)

GAS v. Sprint Communications, Verizon et al.
Case No. 2:20-cv-00007-RWS
Expert for General Access (GAS)
Technology: LTE/5G
Submitted Expert Reports/Deposition (9/21-)

Causam v. Ecobee, Itron, et al
Case No. ITC 337-TA-1277
Expert for Causum
Technology: Load Management
Submitted Expert Reports and Deposition (6/22)

Masimo v. Apple
Case No. ITC 337-TA-1276 and related cases (Trade Secret & Delaware)
Expert for Masimo (2018-)
Technology: Pulse Oximetry
Submitted Expert Reports, Deposition & Trial

TQ Delta v. Nokia, Adtran, CommScope, 2Wire, et al
Cases in Delaware & Texas
Expert for TQ Delta (2019 -)
Technology: DSL and Cable Modems
Submitted Expert Reports, Depositions & Hearings.

Paltalk Holdings v. Cisco Systems Inc.
Western District of Texas (6:21-CV-00757-ADA)
Expert for Paltalk Holdings (2022-)

Technology: VOIP Technologies
Submitted Expert Reports and Deposition

Ollnova Technologies v. Carrier Group, Ecobee, et al
Southern District of Florida (Case 9:22-cv-80388-DMM) & ED Texas
Expert for Ollnova (2022-)
Technology: IoT
Submitted Report and Deposition & Trial

VideoLabs v. Asus, et al
Case No: ITC 337-TA-1323
Expert for VideoLabs (2022-2023)
Technology: Video Conferencing
Reports and Depositions

ViaTech v. Adobe
District of Delaware (CA No. 20-358-RGA-MPT)
Expert for ViaTech (2019-2023)
Technology: Software Licensing
Reports, Deposition, and Trial Testimony

Zilkr v. Cisco
ED Texas, Marshall (Case 2:22-CV-166-JRB-RSP)
Expert for Zilkr (2022-)
Technology: Webex
Reports & Deposition

HouseCanary versus Amrock/Intuit
District Court Bexar County, Tx (2016-CI-06300)
Expert for House Canary (2023-)
Technology: Machine Learning
Reports & Deposition

Additional matters include declarations supporting IPRs at the PTAB for Google (US Patent 8,601,154), On Semiconductor (US Patent 6,212,079), Ubisoft (US Patent 5,490,216), Lumens JDA (2017-2019), Broadcom (WiFi), Sony (US Patent 6,101,534), Kia, (US Patent 5,530,431), Qualcomm, Ericsson, Daimler Benz, VW, Estech, Amazon, Ring, Digital Ally, On Semiconductor, LoganTree, Unified Patents, BMC Software, Masimo, Sentius, BMW, Facebook, PAWS, Google, Daimler, FedEx, Surge LLC, and Dolby.

Earned Degrees

1. **B. Tech (Hons), Electronics & Electrical Comm. Engineering**
   Indian Institute of Technology (IIT), Kharagpur, India
   1984.

2. **Ph.D., Electrical Engineering & Computer Sciences (EECS)**
   University of California (UC), Berkeley. CA
   1989.

Books

1. **VLSI Digital Signal Processors**
   Madisetti, V.K.;
   Boston: MA, IEEE Press: Butterworth Heinemann, 1995, 525 pp.

2. **Quick-Turnaround ASIC Design in VHDL**
   Romdhane, M., Madisetti, V.K., Hines, J.
   Boston: MA, Kluwer Academic Press, 1996, 190 pp.

3. **The Digital Signal Processing Handbook (First Edition)**
   Madisetti, V. K., Williams, D. (Editors)
   CRC Press, Boca Raton, Fla, 1998, 2500 pp.

4. **VHDL: Electronics Systems Design Methodologies**.
   Madisetti, V. K. (Editor)
   Boston: MA, IEEE Standards Press, 2000, ISBN 0-7381-1878-8.

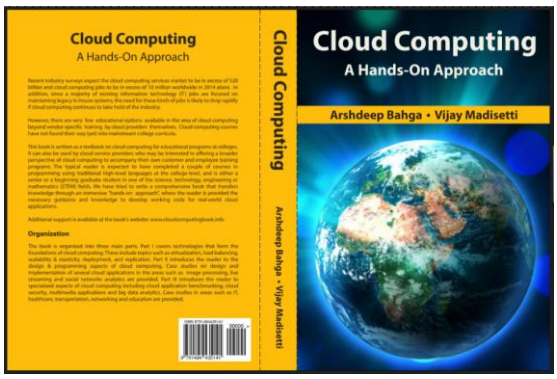
5. **Platform-Centric Approach to System-on-Chip (SoC) Design.**
   Madisetti, V. K., Arpnikanondt, A.
   Springer, Boston: MA, Springer, 2004, 280 pp.

6. **The Digital Signal Processing Handbook – Second Edition.**
   Madisetti, V. K. (2009)
   CRC Press, Boca Raton, Fla.

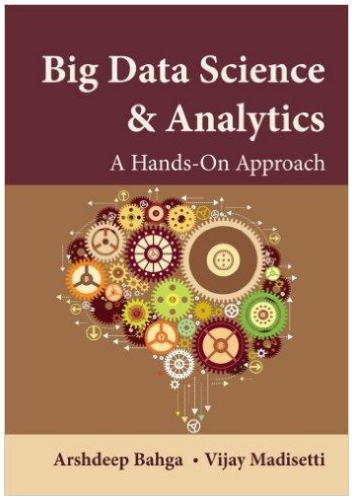
7. **Cloud Computing: A Hands-On Approach**
   A Bahga, V. Madisetti (2013)
   Amazon CreateSpace Publishing, 2013, 454 pp.

8. Internet of Things: A Hands-On Approach
A Bahga, V. Madisetti (2014)
Amazon CreateSpace Publishing, 2014, 450 pp.

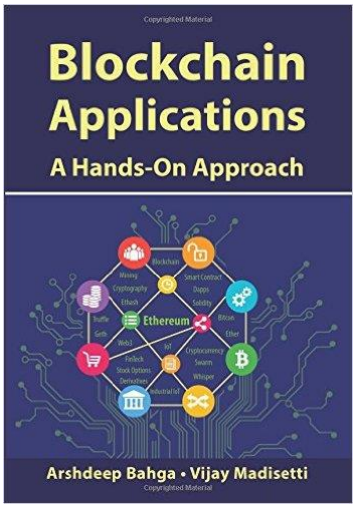




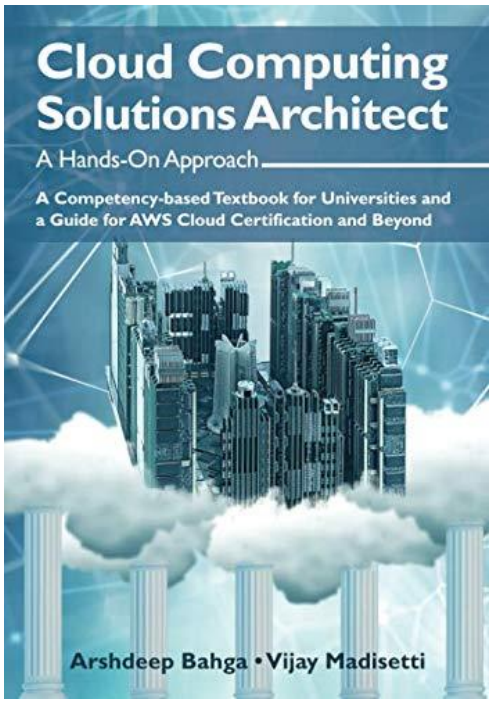
9. Big Data Science & Analytics: A Hands-On Approach
A Bahga, V. Madisetti (2016)
Amazon CreateSpace Publishing, 2016, 542 pp.



10.Blockchain Applications: A Hands-On Approach
A Bahga, V. Madisetti (2017)
Amazon CreateSpace Publishing, 2017, 380 pp.



11. Cloud Solutions Architect: A Hands-On Approach
A Bahga, V. Madisetti (2020)
Amazon CreateSpace Publishing, 2020, 930 pp.



Edited Books & Collection of Papers

1. **Advances in Parallel & Distributed Simulation**
   Madisetti, V.K.; Nicol, D., Fujimoto, R. (Editors)
   San Diego, CA: SCS Press, 1991, 200 pp.

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Table 3. Patent by assignee

Applicant (Assignee)	Patents	%	Applicant (Assignee)	Patents	%
IBM	47	14.0%	Wells Fargo Bank	4	1.2%
Accenture Global Solutions	28	8.4%	Alibaba	3	0.9%
Bank of America	24	7.2%	Dell	3	0.9%
Capital One Services	12	3.6%	The Bank Of New York Mellon	3	0.9%
Mastercard	11	3.3%	The Toronto-Dominion Bank	3	0.9%
Guardtime IP Holdings Limited	8	2.4%	Verizon Patent And Licensing	3	0.9%
Madisetti Vijay K.	8	2.4%	Winklevoss I.P.	3	0.9%
Black Gold Coin, Inc.	7	2.1%	SAP	2	0.6%
Cisco	7	2.1%	Sony	2	0.6%
Acronis International	5	1.5%	Stampery	2	0.6%
Blockchain Asics	5	1.5%	Uipco	2	0.6%
Tran Bao	5	1.5%	Vmware	2	0.6%
Intel	4	1.2%	Walmart Apollo	2	0.6%
Northern Trust	4	1.2%	Wiig Rex	2	0.6%
Shocard	4	1.2%	Xage Security	2	0.6%

Ranked #8 in the list of issued US patents in the area of blockchain

Ranking in the area of US patents issued in the area of blockchain technology in 2020

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Ph.D. Students Graduated

1. **Brian T. Kelley, 1992**
   VLSI Computing Architectures for High Speed Signal Processing
   Member of Technical Staff, Motorola

   Winner of Dr. Thurgood Marshall Dissertation Fellowship Award

2. **Bryce A. Curtis, 1992**
   Special Instruction Set Multiple Chip Computer for DSP
   Member of Technical Staff, IBM

3. **Jaejin Lee, 1994**
   Robust Multitrack Codes for the Magnetic Channel
   Professor, Yonsei University, Korea

4. **Mohamed S. Ben Romdhane, 1995**
   Design Synthesis of Application-Specific IC for DSP
   Director of IP, Rockwell

5. **Shoab A. Khan, 1995**
   Logic and Algorithm Partitioning on MCMs
   Professor, National University of Science & Technology, Pakistan

6. **Lan-Rong Dung, 1997**
   VHDL-based Conceptual Prototyping of Embedded DSP Architectures
   Professor, National Chaio Tung University, Taiwan

   Winner of VHDL International Best PhD Thesis Award, 1997

7. Thomas W. Egolf, 1997
Virtual Prototyping of Embedded DSP Systems
Distinguished Member of Technical Staff, Agere

8. Alvaro Marenco, 1997
On Homomorphic Deconvolution of Bandpass Signals
Professor, Texas A&M University

Winner of GIT ECE Outstanding Teaching Assistant Award

9. Shahram Famorzadeh, 1997
BEEHIVE: A Distributed Environment for Adaptive Signal Processing
Member of Technical Staff, Rockwell

10. Timothy J. Klausutis, 1997
Adaptive Lapped Transforms with Applications to Image Coding.
US Air Force/Univ. of Florida

11. Lan Shen, 1998
Temporal Design of Core-Based Systems
Member of Technical Staff, IBM

12. James DeBardelaben, 1998
Optimization Based Approach to Cost Effective DSP Design
Research Scientist, Johns Hopkins University

Georgia Tech ECE Faculty Award

13. Sangyoun Lee, 1999
Design of Robust Video Signal Processors
Professor, Yonsei University

US Army Sensors Lab Research Excellence Award, 1999

14. Rahmi Hezar, 2000
Oversampled Digital Filters
Member of Technical Staff, Texas Instruments

15. Yong-kyu Jung, 2001
Model-Based Processor Synthesis
Professor, Texas A&M University

16. Mustafa Turkboylari, 2002
Handoff Algorithms for Wireless Applications
Member of Technical Staff, Texas Instruments

17. Yun-Hui Fan, 2002
A Stereo Audio Coder with Nearly Constant Signal to Noise Ratio
Post-Doctoral Research Associate, Northeastern University

18. Subrato K. De, 2002
Design of a Retargetable Compiler for DSP

Member of Technical Staff, Qualcomm

US Army Sensors Lab Research Excellence Award, 1999

19. Chonlameth Aripnikanondt, 2004
System-on-Chip Design with UML
Professor, King Mongkut's University, Thailand

US Army Sensors Lab Research Excellence Award, 1999

20. Loran Jatunov, 2004
Performance Analysis of 3G CDMA Systems
Senior Research Scientist, Soft Networks, LLC. Now at Samsung

21. Antonios Argyriou, 2005, Research Scientist, Philips

22. Pilho Kim, 2009, Scientist, VP Technologies, Inc.

23. M. Sinnokrot, 2009, Staff Engineer, Apple

24. A. Yusuf, 2013, Professor, National University, Pakistan

25. Joel Corporan, **2023**, Senior Scientist, Warner Media, USA

Awards & Honors

1. **Jagasdis Bose National Science Talent Fellowship**, Indian Institute of Technology, Kharagpur, 1980-1984

2. **General Proficiency Prize**, Indian Institute of Technology, Kharagpur, 1984

3. **Demetri Angelakos Outstanding Graduate Student Award**, Univ. of California, Berkeley, 1989

4. **Ira Kay IEEE/ACM Best Paper Award** for Best Paper presented at IEEE Annual Simulation Symposium, 1989

5. **IBM Faculty Development Award** 1990

6. **Technical Program Chair**, IEEE Workshop on Parallel and Distributed Simulation. 1990

7. **Technical Program Chair**, IEEE MASCOTS'94

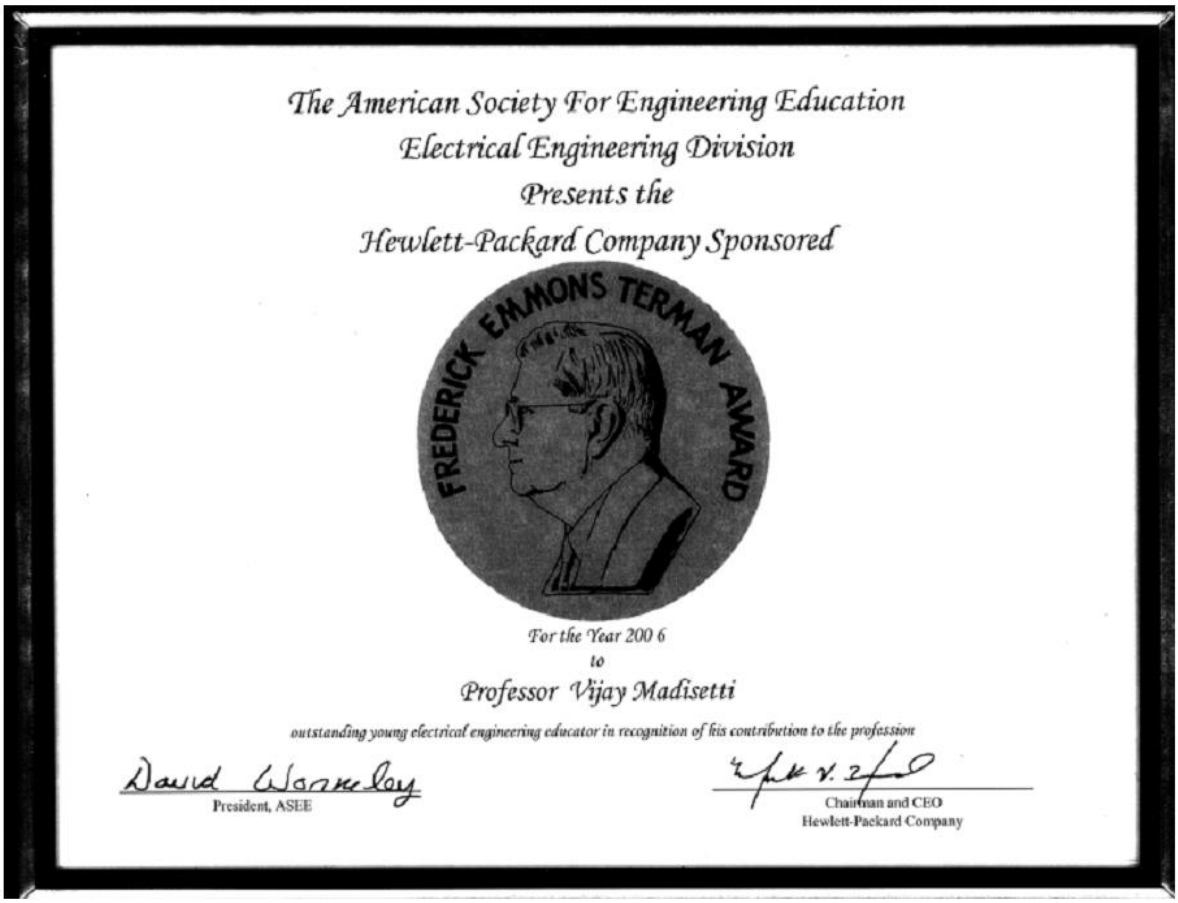
8. **NSF RI Award**, 1990

9. **VHDL International Best PhD Dissertation Advisor Award**, 1997

10. **Georgia Tech Outstanding Doctoral Dissertation Advisor Award**, 2001

11. **ASEE 2006 Frederick Emmons Terman Medal, 2006**

12. **Fellow of IEEE**



Intellectual Property Disclosures (Georgia Tech)

Patent	Date	Description
2843	2004	Method and Apparatus for Improving the Performance of Wireless LANs
2825	2003	Method and Apparatus for Optimal Partitioning and Ordering of Antennas for Layered Space-Time Block Codes in MIMO Communications Systems
2815	2003	How to Rapidly Develop a SyD Application
GSU-023	2003	Rapid Development of SyD Applications

2810	2003	System on Mobile Devices Middleware Design
2718	2003	A Transport Layer Algorithm for Improved Anycast Communication
2717	2003	A Novel Transport Layer Load-Balancing Algorithm
2716	2003	A Transport Layer QoS Algorithm
2715	2003	A Novel Transport Layer Algorithm for MPLS Performance
2659	2002	A New Algorithm and Technology for Implementing Mobile IP with Applications to Voice and Video over Mobile IP
2656	2002	Debugging with Instruction-Level Reverse Execution
2655	2002	Embedded Software Streaming
2539		System of Databases: An Enabling Technology for Programming
2517	2002	A Dynamic Instantiated Real-Time Operating System Debugger
2516	2002	A Dynamic Real-Time Operating System
GSU-009	2001	System of Databases: Architecture,, Global Queries, Triggers and Constraints
2480	2001	Mobile Fleet Application based on SyD Technology
2479	2001	System of Databases: A model with coordination links and a calendar application
1893	1999	Beehive
1726	1995	Very High Scale Integrated Circuit Hardware Description Language Models (VHDL Models)
1401	1995	Self-Compensation Receiver (SCR)