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 IPR2024-00246, Patent 8,793,336 B2

Case IPR2024-00247, Patent 8,825,801 B2

Case IPR2024-00248, Patent 9,032,039 B2

Case IPR2024-00249. Patent 9,619,578 B2

Case IPR2024-00250, Patent 9,922,348 B2

Case IPR2024-00251, Patent 10,839,427 B2

DECLARATION OF KEVIN C. ALMEROTH, PH.D.
IN SUPPORT OF PATENT OWNER'S PRELIMINARY RESPONSE

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I, Kevin C. Almeroth, declare as follows:

I. INTRODUCTION

1. I have been retained by Mobile Data Technologies, Inc. ("MDT") as an independent expert consultant in the *inter partes* review ("IPR") proceedings involving U.S. Patent Nos. 8,793,336 ("the '336 Patent"), 8,825,801 ("the '801 Patent"), 9,032,039 ("the '039 Patent"), 9,619,578 ("the '578 Patent"), 9,922,348 ("the '348 Patent"), and 10,839,039 ("the '039 Patent") (together, the "Challenged Patents"), all presently assigned to MDT. I have been asked to consider the arguments raised by the Petitions regarding the validity of the Challenged Patents in these proceedings. Because the Challenged Patents all share the same specification and only differ with respect to their claims, I discuss all six patents in this Declaration and understand it will be filed in all six proceedings.

2. I am being compensated at a rate of $850.00 per hour for my study and testimony in this matter. I am also being reimbursed for reasonable and customary expenses associated with my work and testimony in this matter. My compensation is not contingent on the outcome of this matter or the specifics of my testimony.

II. QUALIFICATIONS

3. I am currently a Professor Emeritus in the Department of Computer Science at the University of California, Santa Barbara (UCSB). While at UCSB, I

held faculty appointments and was a founding member of the Computer Engineering (CE) Program, Media Arts and Technology (MAT) Program, and the Technology Management Program (TMP). I also served as the Associate Director of the Center for Information Technology and Society (CITS) from 1999 to 2012. I have been a faculty member at UCSB since July 1997.

4. I hold three degrees from the Georgia Institute of Technology: (1) a Bachelor of Science degree in Information and Computer Science (with minors in Economics, Technical Communication, and American Literature) earned in June 1992; (2) a Master of Science degree in Computer Science (with specialization in Networking and Systems) earned in June 1994; and (3) a Doctor of Philosophy (Ph.D.) degree in Computer Science (Dissertation Title: Networking and System Support for the Efficient, Scalable Delivery of Services in Interactive Multimedia System, minor in Telecommunications Public Policy) earned in June 1997. During my education, I took a wide variety of courses as demonstrated by my minor. My undergraduate degree also included a number of courses more typical of a degree in electrical engineering including digital logic, signal processing, and telecommunications theory.

5. One of the major concentrations of my research over the past 30+ years has been the delivery of multimedia content and data between computing devices, including through various network architectures. In my research, I have

studied large-scale content delivery systems, and the use of servers located in a variety of geographic locations to provide scalable delivery to hundreds or thousands of users simultaneously. I have also studied smaller-scale content delivery systems in which content is exchanged between individual computers and portable devices. My work has emphasized the exchange of content more efficiently across computer networks, including the scalable delivery of content to many users, mobile computing, satellite networking, delivering content to mobile devices, and network support for data delivery in wireless networks.

6. In 1992, the initial focus of my research was on the provision of interactive functions (e.g., VCR-style functions like pause, rewind, and fast-forward) for near video-on-demand systems in cable systems; in particular, how to aggregate requests for movies at a cable head-end and then how to satisfy a multitude of requests using one audio/video stream broadcast to multiple receivers simultaneously. This research has continually evolved and resulted in the development of techniques to scalably deliver on-demand content, including audio, video, web documents, and other types of data, through the Internet and over other types of networks, including over cable systems, broadband telephone lines, and satellite links.

7. An important component of my research has been investigating the challenges of communicating multimedia content, including video, between

computers and across networks including the Internet. Although the early Internet was used mostly for text-based, non-real time applications, the interest in sharing multimedia content, such as video, quickly developed. Multimedia-based applications ranged from downloading content to a device to streaming multimedia content to be instantly used. One of the challenges was that multimedia content is typically larger than text-only content, but there are also opportunities to use different delivery techniques since multimedia content is more resilient to errors. I have worked on a variety of research problems and used a number of systems that were developed to deliver multimedia content to users. One content-delivery method I have researched is the one-to-many communication facility called "multicast," first deployed as the Multicast Backbone, a virtual overlay network supporting one-to-many communication. Multicast is one technique that can be used on the Internet to provide streaming media support for complex applications like video-on-demand, distance learning, distributed collaboration, distributed games, and large-scale wireless communication. The delivery of media through multicast often involves using Internet infrastructure, devices and protocols, including protocols for routing and TCP/IP.

8. Starting in 1997, I worked on a project to integrate the streaming media capabilities of the Internet together with the interactivity of the web. I developed a project called the Interactive Multimedia Jukebox (IMJ). Users would

visit a web page and select content to view. The content would then be scheduled on one of a number of channels, including delivery to students in Georgia Tech dorms delivered via the campus cable plant. The content of each channel was delivered using multicast communication.

9. In the IMJ, the number of channels varied depending on the capabilities of the server including the available bandwidth of its connection to the Internet. If one of the channels was idle, the requesting user would be able to watch their selection immediately. If all channels were streaming previously selected content, the user's selection would be queued on the channel with the shortest wait time. In the meantime, the user would see what content was currently playing on other channels, and because of the use of multicast, would be able to join one of the existing channels and watch the content at the point it was currently being transmitted.

10. The IMJ service combined the interactivity of the web with the streaming capabilities of the Internet to create a jukebox-like service. It supported true Video-on-Demand when capacity allowed, but scaled to any number of users based on queuing requested programs. As part of the project, we obtained permission from Turner Broadcasting to transmit cartoons and other short-subject content. We also connected the IMJ into the Georgia Tech campus cable television

network so that students in their dorms could use the web to request content and then view that content on one of the campus's public access channels.

11. More recently, I have also studied issues concerning how users choose content, especially when considering the price of that content. My research has examined how dynamic content pricing can be used to control system load. By raising prices when systems start to become overloaded (*i.e.*, when all available resources are fully utilized) and reducing prices when system capacity is readily available, users' capacity to pay as well as their willingness can be used as factors in stabilizing the response time of a system. This capability is particularly useful in systems where content is downloaded or streamed on-demand to users.

12. As a parallel research theme, starting in 1997, I began researching issues related to wireless devices and sensors. In particular, I was interested in showing how to provide greater communication capability to "lightweight devices," *i.e.*, small form-factor, resource-constrained (*e.g.*, CPU, memory, networking, and power) devices. Starting in 1998, I published several papers on my work to develop a flexible, lightweight, battery-aware network protocol stack. The lightweight protocols we envisioned were similar in nature to protocols like Bluetooth, Universal Plug and Play (UPnP) and Digital Living Network Alliance (DLNA).

13. From this initial work, I have made wireless networking—including ad hoc, mesh networks and wireless devices—one of the major themes of my research. My work in wireless networks spans the protocol stack from applications through to the encoding and exchange of data at the data link and physical layers.

14. At the application layer, even before the large-scale "app stores" were available, my research looked at building, installing, and using apps for a variety of purposes, from network monitoring to support for traditional computer-based applications (*e.g.,* content retrieval) to new applications enabled by ubiquitous, mobile devices. For example, my research has looked at developing applications for virally exchanging and tracking "coupons" through "opportunistic contact" among mobile wireless devices (*i.e.,* communication among devices moving into communication range with each other). In many of the courses I have taught there is a project component. Through these projects I have supervised numerous efforts to develop new "apps" for download and use across a variety of mobile platforms.

15. Toward the middle of the protocol stack, my research has also looked to build wireless infrastructure support to enable communication among a set of mobile devices unaided by any other kind of network infrastructure. These kinds of networks are useful either in challenged network environments (e.g., when a natural disaster has destroyed existing infrastructure) or when suitable support for network communication never existed. The deployment of such networks (or even

the use of traditional network support) are critical to support services like disaster relief, catastrophic event coordination, and emergency services deployment.

16. Yet another theme is monitoring wireless networks, in particular different variants of IEEE 802.11 compliant networks, to (1) understand the operation of the various protocols used in real-world deployments, (2) use these measurements to characterize use of the networks and identify protocol limitations and weaknesses, and (3) propose and evaluate solutions to these problems. I have successfully used monitoring techniques to study wireless data link layer protocol operation and to improve performance by enhancing the operation of such protocols. For wireless protocols, this research includes functions like network acquisition and channel bonding.

17. One theme in my wireless network research has been cross-layer solutions and innovations. As mentioned above, with greater wireless device use and network support, we envisioned new application paradigms and services, for example, when mobile devices come into contact with each other. Instead of relying on existing infrastructure to relay communication, the devices are able to discover each other and communicate directly. Other examples include discovering and using location information to enhance users' experiences. Network support and novel applications span use a variety of network architectures supporting users on foot, in vehicles, and across varying terrains and environments.

Finally, we studied how communication efficiency can be supported through intelligent handoffs as well as location and movement prediction.

18. Protecting networks, including their operation and content, has been an underlying theme of my research almost since the beginning of my research career. Starting in 2000, I have been involved in several projects that specifically address security, network protection, and firewalls. After significant background work, a team on which I was a member successfully submitted a $4.3M grant proposal to the Army Research Office (ARO) at the Department of Defense to propose and develop a high-speed intrusion detection system. Key aspects of the system included associating streams of packets and analyzing them for viruses and other malware. Once the grant was awarded, we spent several years developing and meeting the milestones of the project. A number of my students worked on related projects and published papers on topics ranging from intrusion detection to developing advanced techniques to be incorporated into firewalls. I have also used firewalls, including their associated malware detection features, in developing techniques for the classroom to ensure that students are not distracted by online content.

19. My recent work ties some of the various threads of my past research together. I have investigated content delivery in online social networks and proposed reputation management systems in large-scale social networks and

marketplaces. On the content delivery side, I have looked at issues of caching and cache placement, especially when content being shared and the cache has geographical relevance. We were able to show that effective caching strategies can greatly improve performance and reduce deployment costs. Our work on reputation systems showed that reputations have economic value, and as such, creates a motivation to manipulate reputations. In response, we developed a variety of solutions to protect the integrity of reputations in online social networks. The techniques we developed for content delivery and reputation management were particularly relevant in peer-to-peer communication and recommendations for downloadable "apps."

20. As an important component of my research program, I have been involved in the development of academic research into available technology in the market place. One aspect of this work is my involvement in the Internet Engineering Task Force (IETF). The IETF is a large and open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. I have been involved in various IETF groups including many content delivery-related working groups like the Audio Video Transport (AVT) group, the MBone Deployment (MBONED) group, Source Specific Multicast (SSM) group, the Inter-Domain Multicast Routing (IDMR) group, the Reliable Multicast

Transport (RMT) group, the Protocol Independent Multicast (PIM) group, etc. I have also served as a member of the Multicast Directorate (MADDOGS), which oversaw the standardization of all things related to multicast in the IETF. Finally, I was the Chair of the Internet2 Multicast Working Group for seven years.

21. My involvement in the research community extends to leadership positions for several academic journals and conferences. I am the co-chair of the Steering Committee for the ACM Network and System Support for Digital Audio and Video (NOSSDAV) workshop and on the Steering Committees for the International Conference on Network Protocols (ICNP), ACM Sigcomm Workshop on Challenged Networks (CHANTS), and IEEE Global Internet (GI) Symposium. I have served or am serving on the Editorial Boards of IEEE/ACM Transactions on Networking, IEEE Transactions on Mobile Computing, IEEE Network, ACM Computers in Entertainment, AACE Journal of Interactive Learning Research (JILR), and ACM Computer Communications Review. I have co-chaired a number of conferences and workshops including the IEEE International Conference on Network Protocols (ICNP), IEEE Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON), International Conference on Communication Systems and Networks (COMSNETS), IFIP/IEEE International Conference on Management of Multimedia Networks and Services (MMNS), the International Workshop On Wireless Network Measurement

(WiNMee), ACM Sigcomm Workshop on Challenged Networks (CHANTS), the Network Group Communication (NGC) workshop, and the Global Internet Symposium, and I have served on the program committees for numerous conferences.

22. Furthermore, in the courses I taught at UCSB, a significant portion of my curriculum covered aspects of the Internet and network communication including the physical and data link layers of the Open System Interconnect (OSI) protocol stack, and standardized protocols for communicating across a variety of physical media such as cable systems, telephone lines, wireless, and high-speed Local Area Networks (LANs). The courses I have taught also cover most major topics in Internet communication, including data communication, multimedia encoding, and mobile application design. My research and courses have covered a range of physical infrastructures for delivering content over networks, including cable, Integrated Services Digital Network (ISDN), Ethernet, Asynchronous Transfer Mode (ATM), fiber, and Digital Subscriber Line (DSL). For a complete list of courses I have taught, see my curriculum vitae (CV).

23. In addition, I co-founded a technology company called Santa Barbara Labs that was working under a sub-contract from the U.S. Air Force to develop very accurate emulation systems for the military's next generation internetwork. Santa Barbara Labs' focus was in developing an emulation platform to test the

performance characteristics of the network architecture in the variety of environments in which it was expected to operate, and, in particular, for network services including IPv6, multicast, Quality of Service (QoS), satellite-based communication, and security. Applications for this emulation program included communication of a variety of multimedia-based services, including video conferencing and video-on-demand.

24. In addition to having co-founded a technology company myself, I have worked for, consulted with, and collaborated with companies for nearly 30 years. These companies range from well-established companies to start-ups and include IBM, Hitachi Telecom, Turner Broadcasting System (TBS), Bell South, Digital Fountain, RealNetworks, Intel Research, Cisco Systems, and Lockheed Martin.

25. Through my graduate education, leadership with CITS, involvement in TMP, role in the development of the Internet2 infrastructure, and consulting with ISPs, I have gained a strong understanding in the role of the Internet in our society and the challenges of deploying large-scale production networking infrastructure. CITS, since its inception, has looked at the role of the Internet in society, including how the evolution of technology have created communication opportunities and challenges, including, for example through disruptive technologies like P2P. TMP looks to focus on non-purely technical issues,

including, for example, state-of-the-art business methods, strategies for successful technology commercialization, new venture creation, and best practices for fostering innovation. Through my industry collaborations and Internet2 work, I have developed significant experience in the challenges of deploying, monitoring, managing, and scaling communication infrastructure to support evolving Internet services like streaming media, conferencing, content exchange, social networking, and e-commerce.

26. I am a Member of the Association of Computing Machinery (ACM) and a Fellow of the Institute of Electrical and Electronics Engineers (IEEE).

27. Additional details about my employment history, fields of expertise, courses taught, and publications are further included in my CV submitted as Exhibit 2002 in this proceeding.

III. SUMMARY OF OPINIONS

28. It is my opinion that the challenged claims are patentable and that the petitions in these proceedings have not established otherwise. The combinations of references proposed in the petitions do not disclose each limitation of the challenged claims, and a person of ordinary skill in the art at the time of the invention (the "skilled artisan") would not have combined the references in the manner suggested in the petitions and by Dr. Madisetti.

29. On the contrary, a skilled artisan would not have been motivated to combine the references. Further, even had a skilled artisan been so motivated, the combination would have been very different than that suggested by Petitioner and Dr. Madisetti. Finally, even assuming a skilled artisan had been motivated to combine the references in the manner suggested, the result would not have met the claim language.

30. Petitioner and Dr. Madiestti have created combinations that are the result of hindsight—the result of using the challenged patents as a roadmap to select various portions of prior art references and attempting to combine them without a sufficient reason outside the challenged patents for doing so.

31. My opinions in this Declaration are based on my review of the challenged patents, their prosecution histories before the U.S. Patent and Trademark Office, the IPR Petitions challenging the patents, the Declaration of Vijay K. Madisetti, Ph.D submitted as EX1002 in each proceeding,[1] and references cited therein in support of the Petitions. I also draw upon my experience and knowledge of computer networking, architecture, and software design.

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[1] Throughout this Declaration, I refer to Dr. Madisetti's declarations in each case by the challenged patent number: IPR2024-00246 EX1002 ("Madisetti '336"); IPR2024-00247 EX1002 ("Madisetti '801"); IPR2024-00248 EX1002 ("Madisetti '309"); IPR2024-00249 EX1002 ("Madisetti '578"); IPR2024-00250 EX1002 ("Madisetti '348"); IPR2024-00251 EX1002 ("Madisetti '427").

IV. LEGAL PRINCIPLES

A. Claim Construction

32. I understand that the claims of a patent are read in light of the specification of the patent as understood by a person of ordinary skill in the art at the time of the invention (a "skilled artisan"). I understand that "the time of the invention" refers to the effective filing date of the patent in question. As does Dr. Madisetti, for purposes of my analysis I am considering the effective filing date to be June 18, 2002, the filing date of the original provisional application 60/389,430 to which the Challenged Patents claim priority, but my opinions in this Declaration would not change if any of the Challenged Patents is not entitled to claim priority to the provisional application. Like Dr. Madisetti, I reserve the right to opine further on the question of priority if it later becomes relevant.

33. I understand that claim terms are given their ordinary and customary meaning as would be understood by a skilled artisan in the context of the entire disclosure. A claim term, however, will not receive its ordinary meaning if the patentee acted as its own lexicographer and clearly set forth a definition of the claim term in the specification. In this case, a claim term will receive the definition set forth in the patent.

34. I understand that evidence that is intrinsic to the patent and prosecution history is given more weight than extrinsic evidence. For example, if

there are specific statements in the specification that define the invention, those statements are strong evidence of a definition for a term.

35. In this declaration, unless otherwise stated, I have used what I believe to be the ordinary and customary meanings for the terms used in the claims in the context of the challenged patent. I note that Petitioner's grounds of invalidity offer alternative theories purporting to take into account certain proposed claim constructions in the district court litigation,[2] but ultimately Petitioner takes the position that "for purposes of this IPR, express constructions are not required." I agree that, at this stage of the proceeding and for the opinions I offer in this declaration, express constructions are not required. However, if later in this proceeding, constructions for certain terms would become relevant, I reserve the right to offer opinions under any relevant constructions.

B. My Understanding of Obviousness

36. I understand that a patent claim is not patentable if the claims would have been obvious to a skilled artisan at the time of invention (which, as I said above, I am presently treating as June 18, 2002 since I understand that date is currently not in dispute). I understand that the obviousness inquiry should not be

[2] Petitioner cites to EX1025, the parties' joint claim construction statement in the litigation. I note that EX1025 states at the beginning of the chart: "All terms are proposed by Defendant".

done with hindsight, but from the perspective of a skilled artisan without knowledge of the teachings of the challenged patent.

37. I understand that a claim is obvious when the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a skilled artisan at the time the invention was made. That is, I understand that one does not evaluate the "obviousness" of individual claim elements, but rather must compare the claimed subject matter as a whole to the prior art.

38. I understand that obviousness can be established by combining multiple prior art references to meet each and every claim element, but I also understand that when making a proposed combination of references, care must be taken to avoid hindsight bias. That is, I am informed by counsel that the determination of obviousness cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention, effectively using the claims as a roadmap.

39. I understand that, to support a conclusion of obviousness, there must be an apparent reason for a skilled artisan to combine or modify the prior art references as recited in the claims.

40. As part of this inquiry, I have been asked to consider the level of ordinary skill in the field that someone would have had at the time the claimed

invention was made. In determining the level of ordinary skill, I considered the following: (1) the levels of education and experience of persons working in the field; (2) the types of problems encountered in the field; and (3) the sophistication of the technology.

41. I understand that certain secondary considerations, if presented, can be important evidence regarding whether a patent is obvious or nonobvious. Such indicia include: commercial success of products covered by the patent claims; a long-felt need for the invention; failed attempts by others to make the invention; copying of the invention by others in the field; unexpected results achieved by the invention as compared to the closest prior art; praise of the invention by others in the field, including Petitioner; the taking of licenses under the patent by others; expressions of surprise by experts and those skilled in the art at the making of the invention; and the patentee having proceeded contrary to the accepted wisdom of the prior art.

V. RELEVANT LEVEL OF ORDINARY SKILL IN THE ART

42. I have been asked to consider the level of ordinary skill in the art that a skilled artisan would have had as of June 2002. It is my opinion that a person of ordinary skill in the art (whom I refer to as a "POSITA") would have been a person with a bachelor's degree in information systems, electrical engineering, computer engineering, or computer science, as well as two or more years of relevant industry

experience, which would include experience in handheld wireless devices and web site design. More academic experience would compensate for less industry experience and more industry experience would compensate for less academic experience.

43. I had more than this level of skill in the art at the time of invention, but am able to place myself in the position of a POSITA and evaluate the technology as of the priority date.

44. I note that Dr. Madisetti recites a different and possibly narrower scope of education and experience for a skilled artisan, but then expands his recited scope by saying: "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." Depending on the area of the degree and area of the additional experience, we may not ultimately disagree on the appropriate level of skill. Regardless, my opinions would not change if I applied Dr. Madisetti's definition of a POSITA.

VI. The Challenged Patents

A. The Common Specification

45. The common specification of the Challenged Patents discloses a collaborative web-based system, which it contrasts to the prior art where "it is

generally not possible for different mobile device users to link to and take further action on a persistent version of a given set of shared information content." '336 Patent at 1:59-61.[3] The specification consistently reinforces the two-way nature of the inventive system, as an improvement over the failure of the prior art "to provide a mechanism that facilitates uniform, ***action-driven content access and associated user interaction*** via wireless networks." *Id.* at 1:62-64 (emphasis added) "The system is configured to operate independently of the user device operating system or other user device configuration parameters, such that a given user may ***author, create, publish, send, convey, share, receive, respond to, subscribe to, collaborate with, track, transact, maintain and manage*** personalized messaging content from any type of user device running any operating system." *Id.* at 18:39-45 (emphasis added).

B. Representative Claims

46. Independent Claim 1 of the '336 Patent is representative, and recites:

> 1. A method for managing information content in a network-based communication system, the method comprising the steps of:
>
> providing a first web-based interface accessible to a first user, the first web-based interface being configured to permit the first user to activate a given mobile information channel for sharing content between the first user and one or more additional users; and

[3] While I provide representative cites to the '336 Patent, the other five MDT patents sharing the common specification have equivalent passages.

generating a second web-based interface different than the first web-based interface, wherein the second web-based interface provides each of the one or more additional users access to at least a portion of the shared content via the given mobile information channel to thereby facilitate interaction between the first user and the one or more additional users;

wherein the given mobile information channel supports messaging between the first user and the one or more additional users over a wireless network; and

wherein the mobile information channel is configured to permit the first user to send messaging content to the one or more additional users and to receive messaging content from the one or more additional users.

47. Independent Claim 1 of the ’801 Patent is representative, and recites:

1. A method comprising:

providing an interface permitting a first user to control activation of a mobile information channel through which the first user can share access to content with a plurality of additional users;

activating the mobile information channel responsive to input received from the first user via the interface;

inserting content provided by the first user into the mobile information channel;

receiving additional content relating to the mobile information channel from one or more of said additional users via one or more respective mobile devices associated with at least one wireless network;

inserting at least a portion of the additional content into the mobile information channel; and

integrating into the mobile information channel information associated with at least one wireless networking functionality of said at least one wireless network.

48. Independent Claim 19 of the ’039 Patent is representative, and recites:

19. A method comprising:

receiving, at a server from a mobile device, content for insertion into a previously established application-based information channel, the previously established application-based information channel permitting interaction between a user of the mobile device and one or more additional users;

receiving, at the server from the mobile device, information associated with at least one wireless networking functionality of the mobile device;

integrating the content and the information associated with said at least one wireless networking functionality of the mobile device into the previously established application-based information channel; and

inserting other content from at least one of the additional users into the previously established application-based information channel.

49. Independent Claim 1 of the ’578 Patent is representative, and recites:

1. A method comprising:

providing a first interface permitting designation of at least one content item, via a mobile device, for insertion into an application-based information channel, the at least one content item comprising media data captured by the mobile device; and

integrating the at least one content item and information associated with at least one wireless networking functionality of the mobile device to generate at least one integrated content item; and

inserting the at least one integrated content item into the application-based information channel, the application-based information channel providing a second interface wherein two or more users share access to a plurality of content items including the at least one integrated content item.

50. Independent Claim 13 of the ’348 Patent is representative, and recites:

> 13. A method comprising:
>
> receiving first device-captured data from a first mobile device over at least one network;
>
> receiving second device-captured data from a second mobile device over said at least one network; and
>
> 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.

51. Independent Claim 1 of the ’427 Patent is representative, and recites:

> 1. A method for managing information content in a data communication network, the method comprising the steps of:
>
> providing content management resources at a first uniform resource locator hosted at a first set of one or more servers and accessible to a user of the data communication network, the content management resources being configured to permit the user to designate data from one or more data sources external to the first set of one or more servers;
>
> uploading external data to a second set of one or more servers for use in the data communication network;
>
> reformatting the external data for mobile device use; and
>
> automatically generating mobile resources at a location different from the first uniform resource locator, the mobile resources being accessible independent of the content management resources via one or more mobile devices, the mobile resources automatically including the reformatted external data from a third set of one or more servers in the data communication network.

VII. THE PRIOR ART

A. Neibauer (EX1003)

52. The book title How to Do Everything with Yahoo!, by Alan Neibauer, is a book bearing a copyright of 2000[4] that describes services provided by Yahoo!, one of the leading Internet "portals" at the time. Neibauer, p.4. According to Neibauer, all someone at the time needed to access Yahoo! was a computer with access to the Internet (such as a dial-up connection, which was the predominant way to access the Internet from a user's home in that time frame). *Id*. Neibauer can be described as a "Yahoo! for Dummies" type of reference, describing various Yahoo! services available at the time from a user's perspective in a "how-to" format.

53. Petitioner and Dr. Madisetti mainly focus on two chapters from Neibauer. The first is Chapter 7 titled "Your Yahoo! Home Away from Home," which explains how to access a limited subset of the Yahoo! services on a mobile phone or portable digital assistant ("PDA"). The second is Chapter 21 titled "Communicating with Clubs, Message Boards, Personals, and More," which explains how to access and use Yahoo! features such as Clubs and Message Boards to collaborate with other Yahoo! users.

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[4] I have been asked to assume for my analysis in support of this declaration that Neibauer was publicly available at the end of 2000. I have not been asked to opine whether Neibauer actually was publicly available as of that date.

54. Petitioner and Dr. Madisetti take a "cut and paste" approach to these disclosures in Neibauer, taking the position that it would have been obvious to provide the user-interactive services described in Chapter 21 to users of mobile devices, simply because Chapter 7 describes certain Yahoo! functionality being accessible via a mobile phone or PDA. Neibauer refers to the service itself as "Yahoo! Mobile" and the configuration process to allow a user to configure certain Yahoo! services to be received on a user's mobile device as "Yahoo! To Go". The only disclosure in Neibauer of Yahoo! services available on mobile phones was Mobile Alerts, which periodically sent short alphanumeric messages such as stock prices and weather reports to a cell phone or pager. Neibauer at 167-168. Neibauer also discloses that "Yahoo! To Go" could be used to configure a limited number of PDAs to access simplified versions of certain Yahoo! web pages. *Id.* at 171-172. But Yahoo! screenshots included in Neibauer clearly show that none of the user-interactive features discussed in Chapter 21 were available for the types of devices described in Chapter 7. *See, e.g.*, *id.* at 173-174, which describes a series of checkboxes a user could select to configure which of the PDA-capable Yahoo! services would be available on their PDA:

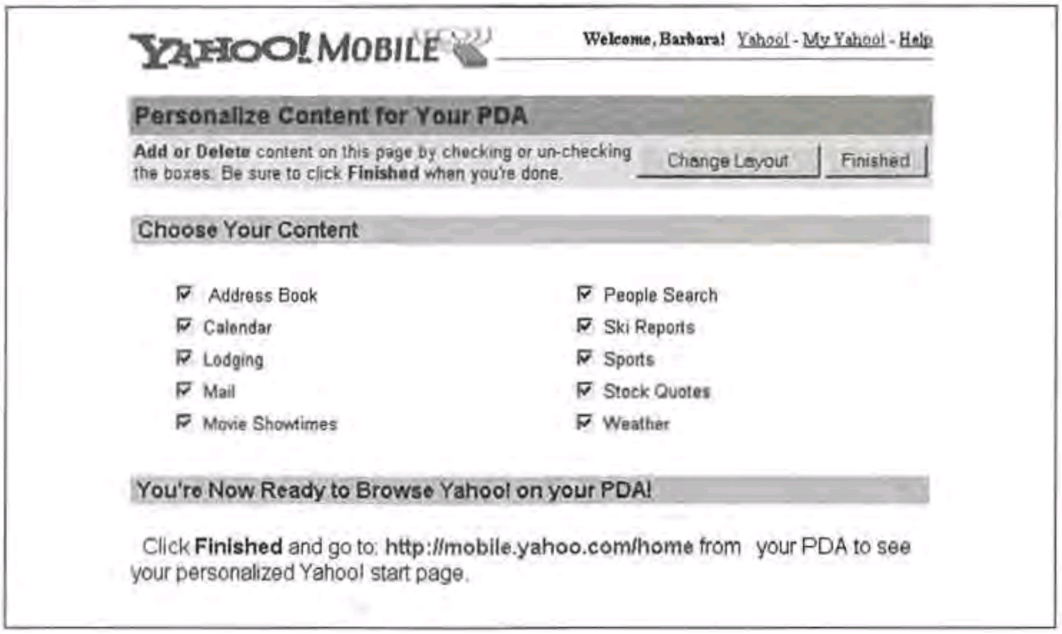

FIGURE 7-15 Adding content to your PDA Yahoo! menu

55. Chapter 7 clearly describes the provision of very limited functionality for a mobile device. For example, Neibauer describes a briefcase function that allows remote access to files, but Yahoo only provided 10 MB of free storage. See, e.g., Neibauer at 156. The major feature touted by Yahoo was the ability to have file sizes greater than 1.4MB, the size of a single floppy disk. *Id*. A majority of the chapter on which Dr. Madisetti relies is dedicated to this briefcase functionality.

56. For the second set of features, Yahoo! Mobile and Yahoo! To Go, support existed for only a limited number of device types.

My PDA

The Yahoo! On Your PDA option on Yahoo! To Go lets you set up to browse Yahoo! using a custom menu from the Web browser on your PDA. Clicking My PDA lets you configure Yahoo! for your PDA and see some sample PDA pages so you can get an idea how you can use Yahoo! to your best advantage, as shown here.

Note *To set up Yahoo! on your PDA, you'll need a PDA with Palm Organizer, a modem, and a browser.*

To set up Yahoo! for your PDA, follow these steps:

1. Click My PDA and then click Continue to display the options shown in Figure 7-14.
2. Enter a device name.
3. Select the device type: Palm III, Palm IV, Palm VII, Visor, pdQ Smartphone, Windows CE, Apple Newton, or Other.
4. Select the browser type: HandWeb, ProxiWeb, pdQ Browser, Avantgo, Qbrowser, or Other.
5. Select the modem type: Minstrel, Palm (clip-on), GSM Phone, or Other.
6. Select either Monochrome or Color.
7. Click Submit.

Neibauer at 171.

57. As shown in this figure, only a few device types were supported. These devices had very limited functionality, especially as compared to more recent devices. Their support for the display of web pages was highly limited and the features supported by Yahoo were similarly limited. *Id.* Finally, these devices had significant hardware constraints and missing functionality, like GPS, that would have been necessary to support the kinds of combinations alleged by Petitioner and Dr. Madisetti.

58. Most significantly, I note in Neibauer Figure 7-15 shown above that none of Yahoo! Clubs, Message Boards, or Photo Albums, which Dr. Madisetti extensively relies on in his invalidity theories, were available on a PDA through Yahoo! Mobile and Yahoo! To Go. The reason was that media-rich, user-interactive features are outside the capabilities of the mobile device features available at the time and outlined in Chapter 7. Indeed, the various Clubs pages in Neibauer that Dr. Madisetti relies on show the resource-intensive nature of Clubs, including, in the screen size required to display the interface, the memory required to receive the website code and render the page on the screen, and the bandwidth required to receive the website code in a time frame the user would find acceptable.

59. For example, consider this screenshot of a main Club page shown on page 475 of Neibauer:

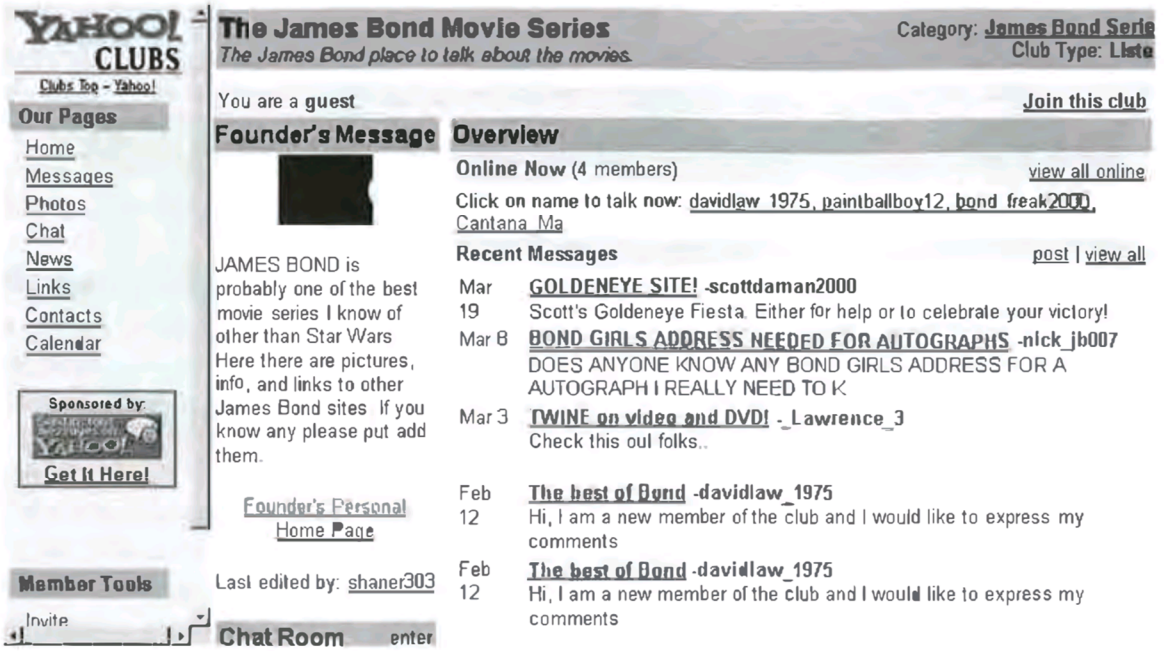

FIGURE 21-8 Club page

As Neibauer explains, this Club page "includes a message from the founder, a list of members who are currently online, and recent messages that are posted to the club's message board. There are also links to the club's private chat room and statistics about club members." Neibauer at 473.

60. Another part of the Clubs interface Dr. Madisetti relies on is the club photo album, which allows a user to browse and view existing photos and upload new photos as shown on page 478 of Neibauer:

The James Bond Movie Series Category: James Bond Series
The James Bond place to talk about the movies Club Type: Listed

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

61. Comparing these resource-intensive interfaces of Neibauer's screenshots to the amount of information displayable on a PDA available at the time, it is evident that a service such as Clubs would have been unusable on a mobile device, even if the Clubs web pages could have been received in a timely manner and stored in the PDA's memory. In fact, Neibauer's screenshots of available Yahoo! Mobile and Yahoo! To Go services on a PDA show text-only interfaces, with no images at all:

Mobile Data Technologies, Inc.
Exhibit 2001
IPR2024-00248
Page 33

Neibauer at 171.

62. This is particularly important given that Petitioner and Dr. Madisetti rely extensively on Clubs users with mobile devices sharing photos, both being able to receive and view the main club picture uploaded by the founder (Neibauer Fig. 21-8, shown below "Founder's Message"), and upload additional pictures to club photo albums by mobile device users (Neibauer Fig. 21-10, by use of the "Add Photo" button). Yet, no similar functionality or even device capability are described in Chapter 7. As a result, even assuming a POSITA would have been motivated to provide support for Yahoo! Clubs on a mobile device, it would have the highly simplified interface consistent with what is shown for basic web features like stock quotes. *Id.* A POSITA would not have expected such an interface to include support for multimedia, including viewing, post, and sharing photos.

63. I therefore disagree that it would have been obvious to provide Yahoo! Clubs and related services to contemporaneous mobile devices via Yahoo! Mobile and Yahoo! To Go, and in fact I view the fact that Yahoo! did not do so as

additional confirmation that it would have not been technically feasible. To a POSITA, it would be reasonable that the reason Yahoo! did not offer more services in Yahoo! Mobile and Yahoo! To Go, was because, for example, each type of device required specific configuration and the common types of mobile devices would not support the more advanced features offered by Yahoo!.

64. This understanding would have been consistent with what a POSITA would have understood about mobile device technology available in the early 2000s: screens were small, memory was limited, and wireless technologies available at the time had very slow transfer rates. See, generally Neibauer at Chapter 7. This is also reinforced by Petitioner and Dr. Madisetti's own extrinsic evidence that they rely on to show the state of the art and commercial availability of transcoding proxy servers. Specifically, Dr. Madisetti quotes from Uwe Hansmann et al., *Pervasive Computing Handbook* (2001) (EX1012) at p. 320: "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***." (emphasis added).

65. While Dr. Madisetti's quote from Hansmann itself supports my opjnions, other parts of Hansmann do so even more. For example, in the very prior sentence to Dr. Madisetti's quote, Hansmann explains that transcoding often must remove website content that mobile devices cannot support: "Multimedia data as it

can be found on Web pages, is ***filtered***, converted, and reformatted, until it reaches the capabilities of of the displaying device." *Id.* (emphasis added). And when discussing the Palm Webclipping Proxy Server, an actual commercial implantation of a transcoding proxy server for Palm PDAs, Hansmann notes: "Applets, Java Script, frames, and cookies are not supported."

66. Dr. Madisetti does not opine contrary to any of the above discussion of limited mobile device capabilities, and indeed appears to ignore the state of the art in his obviousness analysis. Instead, using hindsight, he appears to assume, without support, that any capability needed to support his various combinations was readily available in 2002. In my opinion, the technical infeasibility of providing a media-heavy, full-screen interactive service such as Yahoo! Clubs on mobile devices of the time is a basic flaw in his reasoning. It would not have been obvious to a POSITA to create the kinds of combinations suggested by Dr. Madisetti. Neibauer, for the reasons described above, supports my opinion.

B. Miller (EX1004)

67. International Publication no. WO 00/17775 (Miller) describes a method for online negotiation and group-sharing of information. The method includes the sharing of text, images, and other data in an online forum so that distant participants can communicate with each other. It contains special features

that enable users to submit bids, analyze contracts, make purchases, and conduct other types of transactions.

68. Dr. Madisetti only relies on Miller in his opinions on the ’336 and ’801 Patents, for the concept of creating a collaborative web-based environment. I note Dr. Madisetti does not opine that Miller discloses the use of mobile devices, and I agree it does not. Miller discusses performance of the claimed method using equipment such as networked computers, web browsers, servers, databases, etc. but says nothing about mobile computing. Neither the word “mobile” nor “wireless” appear anywhere in Miller’s 113 pages.

69. As discussed in more detail below, it is consistent with the shortcomings of Dr. Madisetti’s opinions to suggest that the kind of functionality described in Miller would be readily extendible to the environments supported by Neibauer. Only through hindsight and a failure to properly consider the limited state of the art in these types of devices in 2002, can Dr. Madisetti offer his opinions.

C. Cheng (EX1005)

70. Cheng is a patent concerning technology apparently envisioned by Aether Systems (as shown by, e.g., the logo in Fig. 4 and the use of www.aethersystems.com in various example URLs). I am familiar with Aether Systems as a company that received over $1 billion in funding during the Internet

bubble, but lost nearly all that money and completely exited the market only a few years later. *See, e.g.*, https://washingtontechnology.com/2004/08/from-there-to-here/341807/ (last accessed Mar. 10, 2024). Cheng purports to disclose a go-between proxy server that could be used to attempt to convert conventional web sites for viewing on the typical mobile devices of the time, which as I have discussed had small screens, limited memory, and received data over low-bandwidth connections.

71. Cheng's proxy server purports to operate by receiving (or retrieving a cached copy of) a website, and then applying an operator-specified series of transformations to the website content that Cheng calls "SW-Transforms," which could be specified on a global basis (for all recipients) or on a device-specific basis (based on a recipient's specific mobile device). *See, e.g.*, Cheng at 4:56-5:10; columns 17-22. Cheng's SW-Transforms include the capability of adding, replacing, or removing HTML tags and/or text from the source web page in order to attempt to format it for the destination mobile device. *Id.*

72. I am unaware of Aether Systems ever commercializing this technology, nor am I aware of any actual system in the 2002 time frame that even claimed to provide the sort of universal translation service imagined by Cheng, much less successfully did so. Dr. Madisetti does not opine that any existed, and in my opinion it would have been technically infeasible to do at the time given the

rich capabilities of relevant website technology available at the time such as HTML, Java, Javascript, and Flash, and the relatively meager capabilities of mobile phones and PDAs available in the 2002 era. As I discussed in more detail in my above discussion of Neibauer, my opinion is reinforced by other extrinsic evidence raised by Dr. Madisetti.

73. In fact, Cheng itself supports my opinions with its disclosure of SW-Transforms that convert, downscale, and/or fully delete content from the original website so that at least some of it could be displayed on a mobile device. Most notably, Cheng discloses SW-Transforms that completely remove certain HTML tags and content, giving as a specific example the removal of client-side scripting:

RemoveTagAndContent

Description:	This rule tells the conversion engine to remove a specific tag, and the information that appears within the tags, from a Web site or Web content.
Syntax:	sw-transform "Mozilla/3.0 (compatible; HandHTTP 1.1 " RemoveTagAndContent:TAG
Example:	To remove the SCRIPT tag so that all of the client-side script on a specific Web site or page is removed, the following may be entered: sw-transform "Mozilla/3.0 (compatible; HandHTTP 1.1 "SCRIPT

Note:
The RemoveTagandContent tag will not be completely effective if the Web content being transformed is poorly formatted (e.g., there is an open tag without a close tag). The conversion engine will attempt to clean up the HTML, but may not be completely effective. Also, this tag does not have any meaning for empty tags.

Cheng at 19:42-60. Thus, if this SW-Transform were applied to a website that relied on client-side scripting, that website functionality would not work properly on the mobile device because the SW-Transform would have removed the scripting.

74. Cheng discloses that SW-Transforms can be applied on a device-specific basis (to conform all web pages to some specific constraint of a certain mobile device) and a site-specific basis (to adapt the contents of a certain web page or group of pages on a web site for all mobile devices). *See, e.g.*, Cheng, 11:45-62; 12:25-31. Thus, the success or failure of displaying a given website on a given mobile phone would fundamentally depend on the design and capabilities of the website compared with the capabilities of the mobile phone. Neibauer does not disclose (and Dr. Madisetti does not otherwise opine on) the design of or capabilities required by the web pages making up Yahoo! Clubs and its constituent services (Yahoo! Message Boards, Photo Albums, and Messenger), and Dr. Madisetti provides no opinion or evidence that those required capabilities, whatever they may have been, could have been translated by Cheng such that Yahoo! Clubs could have been successfully operated on any mobile device available in 2002. In my opinion, Dr. Madisetti's analysis is necessarily incomplete due to the lack of such details in Neibauer, and his opinion that the

Neibauer/Cheng combination would have worked (and thus a POSITA would have been motivated to combine them) is not supported by the references.[5]

75. Cheng only envisions one-way data transfer: from the server hosting the requested website, through the proxy server translator, and to the client mobile device. *See, e.g.*, Cheng at Abstract:

> A user generates a user request for a web page from a mobile device to a proxy server. The proxy server forwards the user request to an origin web server, which returns the requested web page to the proxy server. A conversion engine within the proxy server extracts the desired content from the web page, and reformats the content in accordance with one or more predefined transform methods associated with the one or more mobile devices before transmitting the transformed web page with the desired content to the one or more mobile devices.

See also Cheng claim 14:

> 14. A method for extracting and reformatting web page content into a format tailored for a mobile device, comprising:
>
> providing a connection between said mobile device and a physical proxy server;
>
> providing mobile device related information to said physical proxy server from said mobile device, said mobile device related information comprising at least one of a type of

[5] It is also consistent with my opinion that, though as described in Neibauer, Yahoo! itself had an extensive mobile-device delivery system (known as Yahoo! To Go) for some of its services, Yahoo! Clubs was not a service that Yahoo! had made available to handheld devices. Given Yahoo!'s vast size and available resources at that time, I find it likely that Yahoo! did not make Clubs available through its mobile interface because it would not have been technically feasible to do so.

content viewer and a type of operating system associated with said mobile device;

receiving a web page from a physical origin web server;

site-mining, at said physical proxy server, to extract content from said web page according to a predefined criteria;

conversion, at said physical proxy server, of said site-mined content based on said mobile device related information; and

forwarding said converted content to said mobile device.

76. Consistent with all these disclosures, Dr. Madisetti does not opine that Cheng envisioned or allowed for upstream data transfer from a client device through the proxy server to the host web server or any other server.

VIII. DEFICIENCIES COMMON TO ALL CHALLENGED PATENTS

A. Obviousness Based on Neibauer Alone

77. In all Challenged Patents but the '427 Patent, Dr. Madisetti opines that it would have been obvious to combine Neibauer's Chapter 22 disclosure of Clubs and its associated services with Neibauer's Chapter 7 disclosure of Yahoo! Mobile and Yahoo! To Go. *See, e.g.*, Madisetti '336 at ¶62; Madisetti '801 at ¶62; Madisetti '309 at ¶59; Madisetti '578 at ¶59; Madisetti '348 at ¶59; Madisetti '348 at ¶59. I disagree that it would have been obvious for at least the reasons I explained in my introduction to Neibauer above.

B. Motivation to Combine Neibauer and Cheng

78. In all Challenged Patents, Dr. Madisetti opines that it would have been obvious to combine Neibauer and Cheng.[6] Dr. Madisetti applies the Neibauer/Cheng combination to claim elements in the Challenged Patents that require mobile functionality. *See, e.g.*, Madisetti '336 at ¶62; Madisetti '801 at ¶62; Madisetti '309 at ¶59; Madisetti '578 at ¶59; Madisetti '348 at ¶59; Madisetti '348 at ¶59. I disagree the combination would have been obvious, for several reasons.

79. First, as I discuss in the above section, Dr. Madisetti separately opines that it would have been obvious to a POSITA to provide Yahoo Clubs and its associated services to a mobile device simply based on Neibauer's disclosure of certain Yahoo! services being available on mobile devices via Yahoo! Mobile and Yahoo! To Go. Again, I disagree this would have been obvious, but Dr.

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[6] For the independent claims of some patents, Dr. Madisetti combines additional references for minor ancillary features: e.g., Miller for the disclosure of creating a collaborative web-based environment ('336 and '801 Patents), Squibbs for the disclosure of location-based functionality in a mobile device ('801, '039, and '578 Patents), and Ausems for obtaining image data from a digital camera ('348 Patent). I do not understand these nuances to have any bearing on Dr. Madisetti's theories on the motivation to combine Cheng with Neibauer, and the presence or absence of these additional references has no bearing on my opinions on why a POSITA would not have combined Cheng with Neibauer. However, for at least similar reasons, a POSITA would also have not been motivated to add additional media-rich features such as image transfer and sophisticated web-based collaboration support to the types of devices contemplated by Neibauer and available at the time.

Madisetti's opinion that Neibauer itself discloses this functionality contradicts his opinion that a POSITA would have been motivated to combine Neibauer with Cheng to achieve the same functionality. If Neibauer does not actually have a deficiency, there would be nothing to motivate a POSITA to look to Cheng or any other reference.[7]

80. Assuming Dr. Madisetti's position that Neibauer alone would have rendered the claims obvious is incorrect and Neibauer actually is deficient, adding Cheng would not solve the deficiency. Dr. Madisetti does not propose modifying Cheng's proxy translation system in any way, and in fact refers to it as "bolt-on functionality." *See, e.g.*, Madisetti '336 at ¶117; Madisetti '801 at ¶109; Madisetti '309 at ¶99; Madisetti '578 at ¶103; Madisetti '348 at ¶102; Madisetti '427 at ¶108. But as I discuss above in my overview of Cheng, Cheng's system only discloses simplistic, one-way functionality: a mobile device sends a request for a web page to the proxy server; the proxy server forwards that request to the actual web server (or retrieves the page from the proxy server's internal cache if it had

[7] Further illustrating this tension, for the '427 Patent Dr. Madisetti does not opine that it would have been obvious to combine Clubs and Yahoo! To Go, and instead only mentions Yahoo! To Go as a motivation to combine Neibauer with Cheng, "to also make the Yahoo! Clubs features described above available to users through mobile devices." Madisetti '427 at ¶110. It is not clear why for five of the six challenged patents Dr. Madisetti opines that Neibauer itself renders obvious making Yahoo! Clubs available through mobile devices, but for the '427 Patent he instead opines that a POSITA would overlook Neibauer and look immediately to Cheng for that same functionality.

been previously retrieved from the web server and stored in the cache), applies the appropriate set of SW-Transforms to the web page based on the capabilities of the requesting mobile device; and sends the translated page to the mobile device. . Consistent with this, the preambles of Cheng's independent claims all recite some variation on "reformatting content into a format readable on a mobile device" Cheng at cols. 24-28 ("1. A system for extracting and reformatting web page content into a format readable on a mobile device"; "11. A method for extracting, filtering and reformatting web page content into a format readable on a mobile device at a physical proxy server"; "12. A system for reformatting content into a format readable on a mobile device"; "13. A system for reformatting web page content into a format readable on a mobile device"; "14. A method for extracting and reformatting web page content into a format tailored for a mobile device"; "18. A physical proxy server for extracting and reformatting web page content into a format tailored for a mobile device"; "22. Apparatus for extracting and reformatting web page content into a format tailored for a mobile device").

81. But the claims of the Challenged Patents recite two-way, interactive functionality, where the mobile device not only receives but sends content. For example:

- "wherein the mobile information channel is configured to permit the first user to send messaging content to the one or

more additional users ***and to receive messaging content from the one or more additional users***" '336 Patent, Claim 1

- "***receiving additional content relating to the mobile information channel from one or more of said additional users*** via one or more respective mobile devices associated with at least one wireless network" '801 Patent, Claim 1
- "***receiving, at a server from a mobile device, content for insertion into a previously established application-based information channel***, the previously established application-based information channel permitting interaction between a user of the mobile device and one or more additional users" '039 Patent, Claim 19
- "providing a first interface ***permitting designation of at least one content item, via a mobile device, for insertion into an application-based information channel***, the at least one content item comprising media data captured by the mobile device" '578 Patent, Claim 1
- "receiving first/second device-captured data from a first/second mobile device over at least one network" '348 Patent, Claim 13

82. Dr. Madisetti's declarations gloss over these claim limitations. For example, for the '336 and '801 Patents, he declares the upstream communication limitation "redundant" to his analysis of a prior limitation, which itself does not address how Cheng supposedly supports upstream transmission of content from a mobile device through the proxy server to the origin web server. Madisetti '336 at ¶ 132 (referring back to ¶¶ 130-131); Madisetti '801 at ¶¶ 124-125 (referring back to ¶¶ 119-123).

83. For the '039 Patent, Dr. Madisetti opines that: "Under the proposed combination, therefore, the new uploaded photo would have been "**receiv[ed], at a server from a mobile device**," as claimed, when a club member via the web browser on their mobile device uploads a photo using the techniques described above." Madisetti '039 at ¶ 100 (emphasis in original). But the prior paragraphs simply recite the same downstream-only disclosure of Cheng he uses in all of his declarations. *Id.* at ¶¶ 92-99.[8]

84. For the '578 Patent, Dr. Madisetti simply relies on the addition of Cheng for the concept of a "mobile device" and walks through Cheng's disclosure

[8] Dr. Madisetti makes a passing, conclusory reference to "the HTTP request that included the photo" (*id.* at ¶ 100), but does not say anything else about this supposed request and how it might include a photo, much less provide any evidence that Cheng's proxy server would have supported such a mechanism. In fact, as I discuss below, Cheng's disclosure of a cache in the proxy server would interfere with any such mechanism.

of translating downstream web page traffic to the mobile device, but does not attempt to reconcile that disclosure with the ’578 Patent claim requirements that the mobile device ***inserts*** (i.e., uploads) designated content into an application-based information channel. Madisetti ’578 at ¶¶ 96-101.

85. For the ’348 Patent, Dr. Madisetti gives lip service to upstream transmission, simply stating without support that “the photo would have been received by the proxy server 110 and origin web server 102 in Cheng.” But Dr. Madisetti does not cite to Cheng in support of that proposition, nor does he propose to modify Cheng’s downstream translation system to support upstream transmission of content from a mobile device through the proxy server to the origin web server. Madisetti ’348 at ¶ 117.

86. In my opinion, Cheng’s omission of the treatment of upstream content transmission is not merely an inconsequential oversight. Two-way transmission of content between a client and server often implies a persistent connection between the two, beyond the transaction-oriented nature of requesting and receiving a web page as disclosed by Cheng. Managing such persistent connections in turn requires a server to keep track of a client’s state, which is done through additional mechanisms such as cookies stored on the client and requested by the server. Cheng makes no mention of any of these considerations.

87. Additionally, Cheng's use of a cache to store pages previously retrieved from the origin web server would directly interfere with any potential two-way communication, by preventing the initial request from a mobile device from reaching the origin web server. The origin web server thus would have no knowledge that the mobile device was trying to establish a connection for the upstream transfer of data. Indeed, the core functionality of Cheng's proxy server is to isolate the mobile device from the origin web server, and to conceal from the origin web server the fact that a mobile device is the client ultimately requesting the content. The proxy server is thus "transparent" to the web server: from the web server's perspective, the proxy server ***is*** the client.

88. Dr. Madisetti opines that it would have been obvious to combine Cheng's proxy server with Neibauer's web server even if both were under the control of a single entity. *See, e.g.*, Madisetti '336 at 74 ("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."). I disagree, and in fact it is my opinion that a POSITA seeking to implement mobile-capable conversion for its own web server would not simply "bolt on" Cheng's proxy server as Dr. Madisetti suggests. Such an arrangement would result in compromises in ease of use and user experience that a POSITA

would find unacceptable, particularly when alternate design choices would not share those compromises.

89. The primary reason I disagree that a POSITA would choose to unnecessarily use Cheng's proxy server model is because users of mobile devices attempting to access the website must know about the proxy server and alter their configuration and/or browsing behavior to account for it. Cheng discloses only two ways for a mobile device to route requests through its proxy server: either through a permanent connection between the client and proxy server via a device configuration (which would route any and all traffic through that proxy), or a "decorated URL" (e.g., www.proxyserver.com/?url=http://www.originalwebserver.com). This reflects my understanding of the choices that were available for the use of proxy servers by a client device at that time.

90. In my opinion, both of these options would be unacceptable to a user, because they make unnecessary work just to access the desired website: either the user would have to manually reconfigure their browser to point to the proxy server in an entity that implemented the Neibuer-Cheng combination every time they wanted to view that website (and then change the proxy configuration again to view other websites), or the user would have to enter a special "decorated URL" every time they wanted to access that entity's website. In my opinion, a POSITA

would find these compromises in ease of use and user experience unacceptable, and that would direct the POSITA away from Cheng's proxy server.

91. Finally, setting aside all the above deficiencies in Dr. Madisetti's analysis, I disagree with Dr. Madisetti that a POSITA would have had a reasonable expectation of success in combining Neibauer and Cheng. As I discussed above, Cheng's SW-Transforms scheme, particularly the RemoveTagAndContent used to strip functionality such as scripts from web pages for incapable mobile, shows that Cheng's system was not a panacea, but rather might work for certain combinations of website content and mobile devices and might work poorly or not at all for other combinations. In my opinion, it is impossible for a POSITA to know how Yahoo! coded its Clubs and related web pages—and thus whether and to what extent Cheng's translation system would have allowed successful operation on a mobile device—from the minimal disclosure in Neibauer.

92. Dr. Madisetti opines that the portions of Yahoo! Clubs he relies on involve "nothing more than straightforward web programming techniques relying on standard technologies such as HTTP, HTML" (e.g., Madisetti '336 at ¶108; Madisetti '801 at ¶100; Madisetti '309 at ¶106; Madisetti '578 at ¶109; Madisetti ' at ¶108; Madisetti ' at ¶114), but he does not cite to anything from Neibauer to support this, and even if correct that begs the question of whether Yahoo! Clubs only used a subset of HTML that could be successfully translated by Cheng's

translator such that it could actually be used on a contemporaneous mobile web browser.

93. Additionally, at bottom Cheng does not disclose a universal translator as Dr. Madisetti seems to assume, but rather a framework and a small subset of examples from what Cheng describes as a "nearly infinite" set of possible transformations that might have to be applied to a given webpage to attempt to present at least some of that webpage on a mobile browser. In my opinion, a POSITA would have had to engage in an undue level of experimentation to determine whether—contrary to all indications from the complexity of Neibauer's web pages and the limited functionality of contemporaneous mobile devices—Neibauer's web pages might be converted through some combination of Cheng's SW-Transforms (either ones disclosed in Cheng, or others the POSITA might have to invent) in a way that the web pages could be viewed on the mobile device at all, much less while retaining all the functionality Dr. Madisetti relies on.

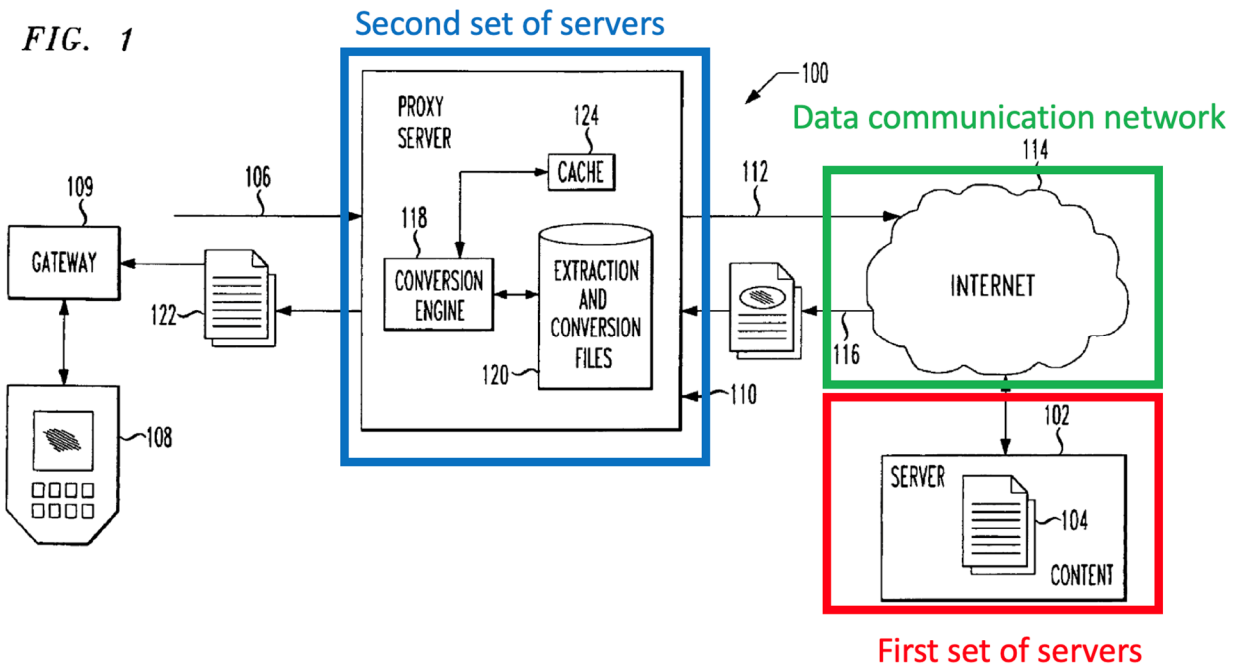
94. All that aside, a POSITA also would understand that, even if they were to engage in the level of experimentation needed to adapt Neibauer's web pages to an available mobile device with all the required functionality intact, it would not matter: the POSITA still would not have had a reasonable expectation of success in combining Neibauer and Cheng for the reason I discussed at length above: that Yahoo! Clubs requires two-way interaction and transfer of content

(e.g., both viewing photos in an album and uploading new photos to the album), while Cheng's proxy server is only configured to handle content delivery in a single, downstream direction. In my opinion, modifying Cheng's proxy server to support upstream content delivery would be well outside the capabilities of a POSITA, under either my or Dr. Madisetti's definition.

IX. DEFICIENCIES SPECIFIC TO INDIVIDUAL PATENTS

A. The '427 Patent

95. Dr. Madisetti opines that the claim limitation "uploading external data to a second set of one or more servers for use in the data communication network" is satisfied by the Neibauer-Cheng combination. I disagree. To help illustrate why I disagree, I will start by reviewing Dr. Madisetti's application of the Neibauer-Cheng combination to the claim language, in reference to the network diagram from Cheng he relies on throughout his opinions (annotated for clarity):



96. First, Dr. Madisetti opines that the recited "data communication network" corresponds to the Internet (annotated in green above). *See, e.g.*, Madisetti '427 at ¶86 ("Neibauer also discloses the ability to manage information content 'in a data communication network' because it allows for sharing and managing of information in a web-based system over the Internet.").

97. Next, Dr. Madisetti opines that in the Neibauer-Cheng combination, Cheng's origin web server 102 (annotated in red above) corresponds to "the server(s) providing the features of Neibauer," which he maps to the "first set of one or more servers" for claim limitation 1[a]. Madisetti '427 at ¶100.

98. Dr. Madisetti then opines that the Neibauer-Cheng combination reads on the claim language "uploading external data to a second set of one or more servers for use in the data communication network" when origin web server 102

transfers a requested Yahoo! web page over the Internet to proxy server 110 (annotated in blue above). Madisetti '427 at ¶106.

99. In this analysis, Dr. Madisetti appears to confuse "uploading" with "downloading," in that he suggests the ***downstream*** transmission of data from origin web server 102 to proxy server 110 actually satisfies a limitation that recites "***uploading*** external data." This is not consistent with what a POSITA would understand "uploading" to entail, and is not even consistent with how Dr. Madisetti uses the term "uploading" elsewhere in his opinions. In fact, in all of the other five related proceedings he approvingly cites from and characterizes the flow of image data ***from*** a user terminal ***to*** the Neibauer web server (which he maps to Cheng's origin web server 102 in the Neibauer-Cheng combination) as "uploading" a photo. Madisetti '336 at ¶136; Madisetti '801 at ¶165; Madisetti '309 at ¶88-89; Madisetti '578 at ¶89-90; Madisetti '348 at ¶115-116.

100. Even elsewhere in his '427 declaration, Dr. Madisetti describes a user sending a photo ***to*** the Yahoo! Clubs web server as an "upload." Madisetti '427 at ¶130 ("The 'Choose File' dialog box would have been familiar not only to ordinarily skilled artisans, but to laypersons who had ever used a browser to upload a file to a website or remote server."). This limitation in the '427 patent is the only he proposes to read "uploading" backwards—on the flow of data ***from*** origin web server 102 ***toward*** mobile device 108—and he gives no explanation for this

departure or rationalization of why a POSITA would understand the word to have a different meaning in this single instance.

101. In my opinion, Dr. Madisetti's read is incorrect and unsupported. In addition to the uniform disclosure in Neibauer that "uploading" refers to the transfer of data ***from*** a client ***to*** a server, Cheng's disclosure is also consistent in its reference to data being returned to the requesting mobile device from the proxy server as a download, not an upload. Cheng at 5:39-41 ("Users can therefore access web sites they need without the inconvenience of waiting online for graphics to ***download onto their mobile devices*** 108."); 12:36-39 ("In this exemplary embodiment, the conversion does not have an effect on the content the user sees, but decreases the amount of data sent, thus providing ***a faster download experience for any user***.") (emphasis added).

102. The '427 Patent itself uses the terms the same way Neibauer and Cheng do. The '427 Patent uses "upload" to refer to data sent ***from*** a client ***to*** a server:

> The content management site makes it simple for unsophisticated ***users to upload***, enter, create, syndicate, distribute or otherwise manage content that is important to them, in a manner that allows such content to be accessed, shared, and acted upon from a mobile device.

'427 Patent at 10:53-58 (emphasis added).

> From the M-channel content list generated in step 2204, an item authoring wizard may be initiated in step 2212.

> This wizard facilitates the authoring of a content item by ***prompting the user*** to enter date and time in step 2214, to enter a title in step 2216, to enter message content, data template or both in step 2218, ***to select or upload media*** in step 2220, to select distribution, delivery and service options in step 2224, and to select publishing options in step 2226.

Id. at 17:25-33 (emphasis added). Also consistent with Petitioner's art, the '427 Patent uses "download" to refer to data returned ***from*** a server ***to*** a client:

> Yet another advantage of the system described in conjunction with the illustrative embodiment is that ***it does not require users to download*** and install any particular client-side software.

Id. at 19:4-7 (emphasis added).

103. The idea of downloading is very different than uploading. Neibauer and Cheng use the terms consistently with a POSITA's understanding: a "download" is data returned by a server in response to a requesting client, while an "upload" is unrequested data sent by a client to a server. Dr. Madisetti even acknowledges that in Cheng "[t]he server 102 responsively ***returns*** 116, via the network 114, ***the requested web page*** 104 ***to the proxy server 110***." Cheng, 4:8-10; Madisetti '427 at ¶106 (emphasis added). Again, a POSITA would understand the return of requested data to a client by a server to be a download, not an upload.

104. Nor would a POSITA understand uploading and downloading to be alternatives or substitutes. Downloading returns data from a server in response to a specific request, while uploading sends unrequested data to a server at the sender's

initiative. Furthermore, there are other well-recognized techniques that might be employed to provide proxy server 110 with a copy of data from origin web server 102, such as "mirroring."

105. Another problem with Dr. Madisetti's application of the Neibauer-Cheng combination to the limitation "uploading external data to a second set of one or more servers for use in the data communication network" lies in his interpretation of the phrases "external data" and "for use in the data communication network."

106. In my opinion, the natural reading this term is that data not yet part of the data communication network is uploaded to the second set of one or more servers so that the uploaded data may be used in the data communication network. In other words, "for use in the data communication network" modifies "external data."

107. However, Dr. Madisetti interprets "for use in the data communication network" as modifying the "second set of one or more servers." Madisetti '427 at ¶106 ("uploads the club home page (with club picture) to proxy server 110 ('***a second set of one or more servers for use in the data [sic] network***') over the Internet.") (emphasis added).

108. I find Dr. Madisetti's interpretation unnatural and unlikely, and in fact it raises multiple questions about the remainder of his application of the Neibauer-

Cheng combination to this claim term. First, Dr. Madisetti does not explain what it means for the second set of one or more severs to be "for use in the data communication network." Being connected to internet 114, it is not clear why Dr. Madisetti believes proxy server 110 is "for use in the data communication network" when he maps origin web server 102, which is also connected to internet 114, to the earlier claim limitation "a first set of one or more servers ***accessible to a user of the data communication network***." I understand that different claim language is presumed to mean different things, but by this read Dr. Madisetti appears to give the two different terms—"for use in the data communication network" and "accessible to a user of the data communication network"—the same meaning: connected to the Internet. This further confirms my opinion that "for use in the data communication network" refers to the external data, not the second set of one or more servers.

109. Finally, Dr. Madisetti opines that the data sent from origin web server 102 to proxy server 110 is "external data" simply because proxy server 110 did not have it before. In other words, he applies the word "external" to proxy server 110, not to the data communication network. Again, I find this reading unnatural and contrary to what a POSITA would understand. Dr. Madisetti's interpretation in fact removes any meaning from the word "external" because the claim requires "uploading external data to a second set of one or more servers." The very fact

that proxy server 110 is requesting a web page from origin web server 102 is because the proxy server does not yet have it—otherwise the proxy server would retrieve the web page from its internal cache and waste the time and resources in requesting and waiting for delivery of another copy. *See, e.g.*, Cheng 5:50-59 ("When the proxy server 110 receives a web page 104 over, say, the Internet 114, the conversion engine 118 can convert and store the web page 122 in a web page 122 specific cache. When a user of a mobile device 108 wants to access the web page 122, the conversion engine 118 retrieves it from the cache 124, which reduces online time.").

110. Thus, in the full context of the claim language, it is my opinion that a POSITA would understand "for use in the data communication network" to refer to the external data, not the second set of one or more servers, and as a result Dr. Madisetti's mapping of the Neibauer-Cheng combination to this claim limitation is incorrect.

X. CONCLUSION

111. I declare that all statements made herein of my knowledge are true, that all statements made on information and belief are believed to be true, and that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001

of Title 18 of the United States Code. I reserve the right to modify my opinions as additional information becomes available to me.

Dated: March 13, 2023 By: Kevin C. Almeroth

Kevin C. Almeroth, Ph.D