UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

YMAX CORPORATION,
Petitioner

v.

FOCAL IP, LLC,
Patent Owner

Inter Partes Review No.: Unassigned

U.S. Patent No. 8,457,113

DECLARATION OF TAL LAVIAN, Ph.D., IN SUPPORT OF PETITION FOR INTER PARTES REVIEW OF CLAIMS 1, 2, 8, 11, and 15-19 OF U.S. PATENT NO. 8,457,113

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Declaration of Tal Lavian, Ph.D.

I, Tal Lavian, declare as follows:

1. I make this declaration based upon my own personal knowledge and, if called upon to testify, would testify competently to the matters contained herein.

2. I have been asked to provide technical assistance in connection with inter partes review of U.S. Patent No. 8,457,113 ("the '113 Patent").

3. This declaration is a statement of my opinions on issues related to the invalidity of claims 1, 2, 8, 11, and 15-19 of the '113 Patent.

I. Background and Qualifications

4. My qualifications are stated more fully in my curriculum vitae. Ex. 1016. Here I provide a brief summary of my qualifications.

5. I have more than 25 years of experience in the networking, telecommunications, internet, and software fields. I received a Ph.D. in Computer Science from the University of California at Berkeley in 2006 and obtained a Master's of Science ("M.Sc.") degree in Electrical Engineering from Tel Aviv University, Israel, in 1996. In 1987, I obtained a Bachelor of Science ("B.Sc.") in Mathematics and Computer Science, also from Tel Aviv University.

6. I am currently employed by the University of California at Berkeley and was appointed as a lecturer and Industry Fellow in the Center of Entrepreneurship and Technology ("CET") as part of UC Berkeley College of Engineering. I have been with the University of California at Berkeley since 2000 where I served as Berkeley Industry Fellow, Lecturer, Visiting Scientist, Ph.D. Candidate, and Nortel's Scientist Liaison, where some positions and projects were done concurrently, and others, sequentially.

7. I have more than 25 years of experience as a scientist, educator and technologist. For eleven years from 1996 to 2007, I worked for Bay Networks and Nortel Networks. Bay Networks was in the business of making and selling computer network hardware and software. Nortel Networks acquired Bay Networks in 1998, and I continued to work at Nortel after the acquisition. Throughout my tenure at Bay and Nortel, I held positions including Principal Scientist, Principal Architect, Principal Engineer, Senior Software Engineer, and led the development and research involving a number of networking technologies. I led the efforts of Java technologies at Bay Networks and Nortel Networks. In addition, during 1999-2001, I served as the President of the Silicon Valley Java User Group with over 800 active members from many companies in the Silicon Valley. From 2008 to 2008, I worked as a communications consultant at Ixia,

where researched and developed advanced network communications testing technologies.

8. Prior to that, from 1994 to 1995, I worked as a software engineer and team leader for Aptel Communications, designing and developing mobile wireless devices and network software products. These telecommunications cellular devices provided short messaging service (SMS) between base stations and mobile devices. In addition, I developed a network protocols for the base stations and the mobile wireless devices. Furthermore, I developed a GPS-based application to track the quality of signals in urban areas between the mobile devices and the base stations. From 1990 to 1993, I worked as a software engineer and team leader at Scitex Ltd., where I developed system and network communications tools (mostly in C and C++). From 1987 to 1990, I worked as a software engineer and team leader at Shalev, where I developed real-time software and algorithms (mostly in C and C++). From 1983 to 1987, as a student, I worked as a software engineer on several part time projects.

9. I have extensive experience in telecommunications and network communications technologies, including routing and switching architectures and protocols including Multi-Protocol Label Switching Networks, Layer 2 and Layer 3 Virtual Private Networks, Voice over IP (VoIP), telephony systems, PSTN networks, circuit switching, and Pseudowire technologies.

10. Much of my work for Nortel Networks (mentioned above) involved the research and development of these technologies. For example, I wrote software for Bay Networks and Nortel Networks switches and routers, developed network technologies for the Accelar 8600 family of switches and routers, the OPTera 3500 SONET switches, the OPTera 5000 DWDM family, and the Alteon L4-7 switching product family. I wrote software for Java based device management including software interface to the device management and network management for the Accelar routing switch family network management system.

11. I am named as a co-inventor on more than 80 issued patents and I have co-authored more than 25 scientific publications, journal articles, and peer-reviewed papers. Furthermore, I am a Senior Member of the Institute of Electrical and Electronics Engineers ("IEEE").

12. I currently serve as a Principal Scientist at my company Telecomm Net Consulting Inc., where I develop network communication technologies and provide research and consulting in advanced technologies, mainly in computer networking and Internet technologies. In addition, I serve as a Co-Founder and Chief Technology Officer (CTO) of VisuMenu, Inc., where I design and develop architecture of visual IVR technologies for smartphones and wireless mobile devices in the area of network communications. The backend architecture implements a telephone Private Branch Exchange ("PBX") that makes Session

Initiation Protocol ("SIP") based Voice over Internet Protocol ("VoIP") telephone calls to other SIP trunks and telephone services, such as Public Switch Telephone Network ("PSTN"). The system is based on cloud networking and cloud computing utilizing Amazon Web Services. I have extensive experience with PBX, telecommunications systems, networking equipment, and call centers telephony systems. Additional details of my background are set forth in my curriculum vitae (*see* Ex. 1016), which provides a more complete description of my educational background and work experience.

II. Legal Understanding

13. My opinions are also informed by my understanding of the relevant law, although I am not a lawyer and do not intend to testify about legal issues. I understand that the patentability analysis is conducted on a claim-by-claim basis and that there are several possible reasons that a patent claim may be found to be unpatentable.

14. I understand that earlier publications and patents may act to render a patent unpatentable for one of two reasons: (1) anticipation, and (2) obviousness.

A. Anticipation

15. I understand that a single piece of prior art "anticipates" a claim if each and every element of the claim is disclosed in that prior art. I further

understand that, where a claim element is not explicitly disclosed in a prior art reference, the reference may nonetheless anticipate a claim if the missing claim element is necessarily present in the apparatus disclosed, or is a natural result of the method disclosed—that is, the missing element is "inherent" in what is disclosed.

B. Obviousness

16. Second, I understand that the prior art may render a patent claim "obvious." I understand that two or more pieces of prior art that each disclose fewer than all elements of a patent claim may nevertheless be combined to render a patent claim obvious if the combination of the prior art collectively discloses all elements of the claim and one of ordinary skill in the art at the time would have been motivated to combine the prior art. I understand that this motivation to combine need not be explicit in any of the prior art, but may be inferred from the knowledge of one of ordinary skill in the art at the time the patent was filed. I also understand that one of ordinary skill in the art is not an automaton, but is a person having ordinary creativity.

17. I further understand that one or more pieces of prior art that disclose fewer than all of the elements of a patent claim may render a patent claim obvious if including the missing element would have been obvious to one of skill in the art at the time of the alleged invention (that is, if the missing element represents only

an insubstantial difference over the prior art, or a reconfiguration of a known system).

18. I understand that the obviousness analysis must focus on the knowledge available to one of skill in the art at the time of the invention in order to avoid impermissible hindsight. I further understand that the obviousness inquiry assumes that the person having ordinary skill in the art would have knowledge of all relevant references available at the time of the invention.

III. Person Of Ordinary Skill In The Art

19. It is my opinion that a person of ordinary skill in the art with respect to the ’113 patent in 1999-2000 would have a bachelor’s degree in electrical engineering, computer science, or the equivalent thereof and approximately 2 years of professional experience within the field of telecommunications or network communications.

20. The ’113 patent concerns the basic architecture of the telephone network that has existed in the United States for many decades, as well as basic internet technology that was well known by 1999-2000. These topics were covered in detail by that time in books, in publications by standards bodies, and by vendors that provided products and solutions in these areas. Because the technology involved in the ’113 patent involves well-known technologies and

functionalities, an engineer or computer scientist with approximately 2 years of experience in telecommunications would be well-versed in the concepts disclosed in the ’113 patent.

21. My opinions regarding the level of ordinary skill in the art are based on, among other things, my over 25 years of experience in the field of telecommunications, network communications, computer science and engineering, 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 and co-workers, both past and present.

IV. Summary Of The ’113 Patent

A. Priority Date

22. The face of the ’113 patent reflects a chain of patent applications dating back to May 4, 2000. I have been informed that in pending litigation against Petitioner YMax Corporation in which the ’113 patent is being asserted, the plaintiff asserting infringement has stated that the claims of the ’113 patent may be entitled to a priority date as early as June 1, 1999. For this declaration, I will

assume that the '113 Patent is entitled to the filing date of May 4, 2000, and that it may be entitled to an invention date as early as June 1, 1999.

B. Overview Of The '113 Patent

23. What the specification of the ’113 Patent describes as the alleged invention is rather different from what the claims recite.

24. The '113 Patent summarizes its alleged invention as relating to “a system for allowing a subscriber to select features of the subscriber’s telephone service and to various novel features that can be selected.” Ex. 1001 at 1:23-26.

25. The specification explains that telephone companies offer optional features such as call forwarding. *Id.* at 1:52-54, 2:17. However, the specification continues, “these features typically require access from [the calling party or called party's telephones] and are extremely awkward to program. The user interaction is not only awkward, it is limited and requires interaction with the telephone company to provision them. In other words, past systems for provisioning, meaning addition, modification, or control of telephone features, required a subscriber to make the feature selection through the telephone business office. Central office workers would then implement the provisioning under request of the business office.” *Id.* at 2:4-16.

26. To address this alleged problem, the specification discloses the alleged invention of using a website interface for configuring telephone system

features like call waiting instead of having to call the telephone company's customer service line. *See id.* at 2:56-64 ("SUMMARY OF THE INVENTION: A system for allowing a subscriber to remotely control features is described herein along with various telephone features that may be programmed into the system. A subscriber may be any customer using the telephone service, in contrast to employees of the PSTN [the traditional telephone network]…"); *Id.* at 5:16-24 ("FIG. 1 illustrates the preferred method for an authorized subscriber to modify the 3rd-party control criteria by means of the world wide web … The subscriber 12 interacts with the web 22 via the Internet to quickly and easily specify the enhanced 3rd-party call control features.") This "eliminat[es] the need to go through the telephone company (telco) business office." *Id.* at 3:24-27.

27. The patent specification also spends many columns detailing two allegedly new telephone features: branch calling, and caller ID-based call routing. *See id.* at 7:54-12-20. Indeed, the title of the patent is "Branch Calling and Caller ID Based Call Routing Telephone Features."

28. There are two notable facts in connection with these disclosures.

29. First, by July 1, 1999, there was nothing inventive about setting up a website for configuring telephone options rather than having to call customer service. Using a website to configure telephone features was already in the prior art. As one example, U.S. Patent No. 6,463,145 to O'Neal et al. ("O'Neal")

discloses a system that allows a user to "review and/or modify [their] communication options" (such as "call forwarding") over the world wide web using a "user computer 100" in communication with a "web-site" and a "web server 122." Ex. 1003 at 16:36-64, 7:45-8:22, 11:26-51, Fig. 1.

30. As a further example, U.S. Patent No. 5,958,016 to Chang et al. ("Chang") discloses a system where the user can "review and/or change" their telephone "service control information" (such as "chang[ing] the 'forward to' number") over the world wide web. Ex. 1004 at 18:33-21:27, 2:54-67. In explaining the motivation for this invention, Chang notes that "[i]t is too cumbersome to require the subscriber to call the local telephone company's business office and request each and every one of the routine changes" and that "[a] need therefore still exists for a technique which will enable any subscriber to personally access and control their AIN ['Advanced Intelligent Network'] services from a general purpose computer without specially developed hardware or software interfaces." Ex. 1004 at 2:54-67, 4:39-42.

31. Even the '113 Patent itself admits that web-enabled telephone feature configuration was already known: "Today, there are web-based companies managing 3rd-party call control, via the toll-switch network, which allow users to enter call control information through a web portal." Ex. 1003 at 1:30-40.

32. This is not surprising because by June of 1999, there were over 3 million websites on the web, including Yahoo (launched in 1994), Amazon (launched in 1995), and eBay (launched in 1995). *See* Ex. 1010. Indeed, in 1996 – over two years prior to June 1, 1999 – eBay hosted over 250,000 auctions that received over one million bids. *See* Ex. 1013.

33. Second, in any event, none of the patent claims challenged in the accompanying petition (the "challenged claims") focus on using a website to configure telephone options, and none recite either branch calling or caller ID-based call routing.

34. Instead, the challenged claims, drafted approximately a decade after the filing of the first priority application, are directed primarily to a call processing system that routes calls over both the traditional telephone network (the PSTN, a circuit switched-based network) and over the internet (a packet switched-based network). However, as shown below, routing calls over both the PSTN and the internet was also already in the prior art by June 1, 1999.

C. State Of The Art

35. As explained below, the technology claimed in the '113 patent was well known in the telecommunications field by June 1, 1999. The '113 patent concerns the basic architecture of the telephone network that has existed in the United States for many decades, as well as basic Internet technology that was well

known by 1999-2000. These topics were covered in detail by that time in books, in publications by standards bodies, and by vendors that provided products and solutions in these areas. Exhibits 1021-1026 are just few examples of books, standard bodies publications and products at this time period.

1. The PSTN / Circuit Switching Networks

36. The PSTN (public switched telephone network) is the world's collection of interconnected circuit-switching telephone networks.

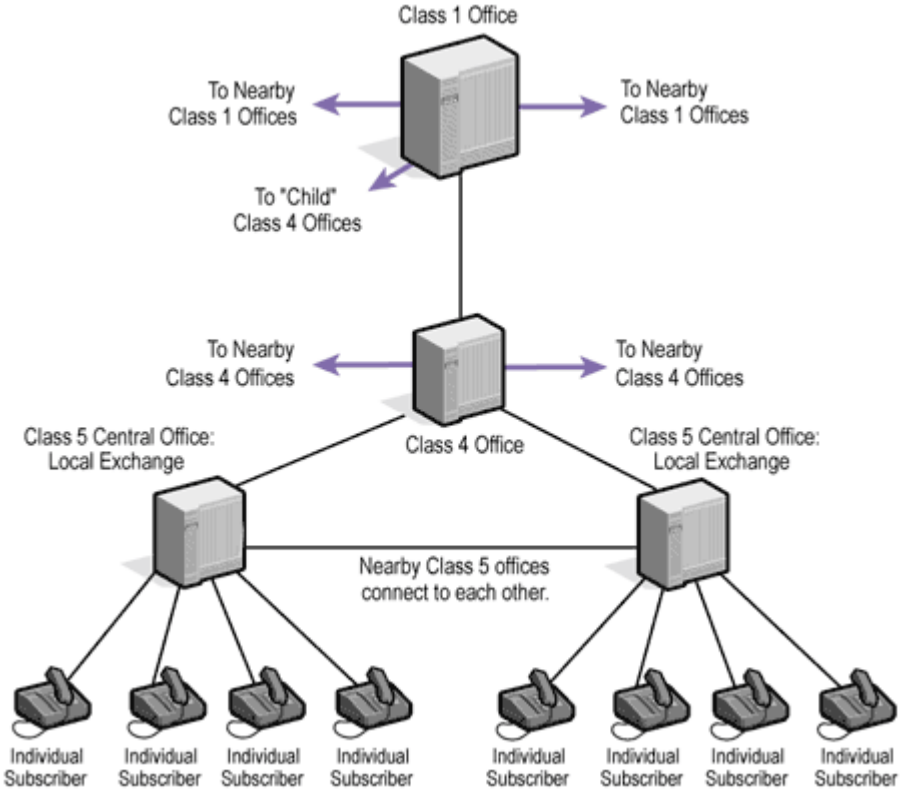
37. In the United States, the PSTN is the conventional telephone network, primarily built by AT&T when it was "the" telephone company in the United States. Telephone calls have been made over the PSTN in the United States for over a century.

38. In the United States, the PSTN is a countrywide network of switches connected to each other by wires. The wires and switches between them connect the telephone of a calling party to the telephone of the called party. Once a telephone call between two landline telephones is established, there is a continuous physical path of wires, linked by one or more switches, between the telephones at each end of the call that is dedicated solely to that call. This is the meaning of the term "circuit switching." The term refers to the switching of infrastructure from

one dedicated use to another. The network focus is on circuit-based, or connection-oriented, systems designed for delivery of voice communications.

39. Even more specifically, the PSTN uses a hierarchy of switches. This makes it possible to scale the telecommunications network to accommodate a large number of end users across the country. Traffic is managed between the various switching offices depending on the type of traffic that was to be connected: local traffic, long distance traffic, and international traffic.

40. The switches in the PSTN use a five-level hierarchy: edge or end (class 5), toll or tandem (class 4), primary (class 3), sectional (class 2) and regional (class 1). Landline phones in people's houses are generally connected to a geographically local class 5 switch (also be called an edge switch, end switch, or central office switch). Tandem/Class 4 switches generally connect edge/class 5 switches together, although nearby class 5 switches can be connected directly. In the PSTN, class 2 and 3 switches are used infrequently, and class 4 switches can be connected to one another as well as by a class 1 switch. The basic architecture of the PSTN can therefore be illustrated by the following diagram:



41. The PSTN switch hierarchy does not mandate physical separation. Switches from one or more adjacent classes (specifically edge and tandem) can be located together in the same physical facility. A combined class 4/class 5 switch is often called a "hybrid" switch.

42. When a telephone call is placed on the PSTN, the call typically travels from the caller's phone to the edge switch in the caller's local central office. Unless the recipient is in the same geographical area and directly connected to the same central office, the call is then typically routed to one or more tandem switches (in sequence), until it reaches the edge switch that is directly connected to the recipient's phone, and finally to the recipient's phone. The switches use the

telephone number dialed by the caller to know where to route the call. Thus, the network of switches enables the communication network to connect users either within or outside a local geographic area.

2. Signaling

43. In addition to carrying voice communications, the PSTN also carries signaling, which is information used to control the call. Signaling communicates information the network needs to operate, such as the signal sent to the local central office from a telephone when the handset is picked up that notifies the central office to send the telephone a dial tone, or the signal from the central office that tells a telephone to ring because there is an incoming call. The protocol that is used for signaling on the PSTN is called Signalling System 7, or SS7.[1]

44. The SS7 signaling protocol was first issued by CCITT (for Comite Consultatif International Telephonique et Telegraphique, now known as the ITU-T for Telecommunication Standardization Sector of the International telecommunications Union, the primary international body for cooperative telecommunications standards) in 1980 (and was revised in 1984, 1988, and 1992).

3. Packet-Switching Networks: The Internet and Voice over IP

[1] Ex. 1017.

45. As explained above, the PSTN is a circuit-switched network, which requires a dedicated point-to-point connection during a phone call. In contrast, the internet is a packet-switched network. There is no dedicated route between two computers that are communicating over the internet. Rather, information to be transmitted through the internet is broken down into small blocks called packets, each of which includes the address of the destination computer. Each packet may travel a different route through the connected parts of the internet before arriving at the destination computer. The packets are then reassembled at the destination computer.

46. TCP/IP is a collection of protocols used for, among other things, sending information through the internet. The "IP" stands for Internet Protocol.

47. **Voice over IP (VoIP).** VoIP is the transmission of voice that has been converted into digital packets of data using the Internet Protocol. VoIP communications typically take place over the internet, though they could use a private network.

48. As the '113 patent admits, VoIP was invented and used before the alleged invention of the '113 patent. *See* Ex. 1001 at 2:51-54 ("There are Voice Over Internet Protocol (VoiP) products emerging that provide better user interfaces and control but they do not take advantage and [sic] voice quality of the PSTN.")

49. Indeed, a public domain VoIP application NetFone (later called Speak Freely) was released in 1991 by Autodesk. *See* Ex. 1018.

50. The first commercial internet VoIP application, called Internet Phone, was released by Petitioner's predecessor VocalTec Communications in February of 1995.

4. Processing A Call Between A Traditional Telephone (Over The PSTN) And A User Of Voice Over IP (Over The Internet)

51. U.S. Patent No. 6,031,836 (the Haserodt patent), the application for which was filed several ***years*** before the earliest application in the chain leading to the '113 patent, discloses not just Voice over IP telephony, but also ***voice communication between a VoIP user and a PSTN user***, processing calls using both a packet-switched network and a circuit-switched network. *See* Ex. 1015 at 1:10-17 ("It is known in the communications arts that voice calls can be carried by the Internet (or some other data transport network) between a pair of Internet phones or voice-enabled computers. It is also known that voice calls carried by the Internet can be interfaced by a gateway to the telephone network so that an Internet phone or a voice-enabled computer connected to the Internet can engage in a voice call with a standard telephone connected to the telephone network."). Haserodt also discloses ***use of a website*** to allow users to choose and configure telephony features, such as "redirection of incoming calls to another destination." *Id.* at

2:33-50 ("Specifically according to another aspect of the invention, a method of accessing telephony features over the Internet by using the World Wide Web (WWW) comprises the following steps. A WWW browser of a client requests a WWW page that defines a telephony feature form from a WWW server via the Internet. The WWW server responds by providing the requested WWW page to the client via the Internet. The WWW browser indicates selection of an individual telephony feature by marking up the telephony feature form of the received WWW page, and the client sends the marked up WWW page via the Internet to an interpreter (e.g., to the WWW server). The interpreter interprets the marked up telephony feature form to determine the selected individual telephony feature. In response to the determination, a provider of the telephony features then provides the selected individual telephony feature. Thus, the conventional WWW browsers are used without modification to access telephony features via the Internet."); *id.* at 5:30-49.

52. In short, prior to June 1, 1999, calls over the internet (Voice over IP), calls between traditional telephones connected to the PSTN and devices connected to the internet using Voice over IP, signalling protocols for both the PSTN (such as SS7) and for Voice over IP (such as SIP and H.323), and website-based telephone feature management were all well-known technologies.

V. Claim Construction

A. Background

53. I understand that, for purposes of the accompanying petition for Inter Partes Review of the ’113 patent, the challenged claims must be given their broadest reasonable interpretations to one of ordinary skill in telecommunications in light of the specification.

B. “web enabled”

54. Claim 1 recites “A method performed by a **web enabled** processing system including one or more web servers coupled to a call processing system…”

55. The broadest reasonable interpretation of the phrase “web enabled” is “capable of receiving information from, or sending information over, the internet’s world wide web.” This is supported by the specification, which has numerous disclosures of the disclosed processing system either receiving or sending information through the web. *See*, *e.g.*, Ex. 1001 at 2:67-3:3, 4:1-3, 5:16-20, 5:22-24, 6:41-46, 8:8-12.

C. “coupled to”

56. Claim 1 recites “the call processing system **coupled to** at least one switching facility …” The broadest reasonable interpretation of the phrase “coupled to” is “connected either directly or indirectly.” Support for this

interpretation can be found in the specification of the '113 Patent at 3:29-40. The specification there sets forth two embodiments, both of which use what it calls a tandem access controller as the "call processing system." The specification states that in one embodiment, the tandem access controller is merely "connected to the PSTN" (*id.* at 3:28-31), allowing for an indirect connection with any particular kind of PSTN switch such as a tandem switch. In contrast, the specification states that in the second embodiment, the tandem access controller is "connected internally to the PSTN in a local service area. The TAC provides features, selected by the subscriber, to all edge switches ***connected to*** the PSTN tandem switch. ***Connecting directly to the PSTN tandem switch*** (or embedding the system into the tandem switch) eliminates the signal degradation problems …" *Id.* at 3:33-40 (emphases added). Notably, the features provided by the TAC (such as call forwarding) would be provided to all edge switches connected either directly or indirectly (such as through another tandem switch) to the tandem switch. Thus, "connected" (and its synonym "coupled") is different from (and broader than) "connect[ed] directly." Indeed, the applicants used the word "directly" in the phrase "Connecting directly to the PSTN tandem switch" when they were specific about a direct connection.

57. Support for this broadest reasonable interpretation can also be seen in dependent claim 124 of the '113 patent. The claim recites "A method as defined in

claim 1 wherein the one or more web servers ***coupled*** to the call processing system are ***coupled through a data base***." (emphases added). That a web server can be "coupled to" the call processing "through" a third item requires "coupled" to be broad enough to included being connected indirectly.

58. That "coupled" encompasses both direct and indirect connection is also seen in the prosecution history of related U.S. Patent No. 6,529,596. There, the applicant differentiated between a connection and a direct connection by amending the claims to state "said TAC being directly connected to a PSTN tandem switch" in an attempt to overcome prior art. Ex. 1006 at 108.

D. "switching facility"

59. Claim 1 uses the phrase "switching facility"/"switching facilities" as follows (Ex. 1001 at 12:33-50):

> a second network coupled to a ***switching facility*** of a telecommunications network, the telecommunications network comprising edge switches for routing calls from and to subscribers within a local geographic area and ***switching facilities for routing calls to other edge switches or other switching facilities*** local or in other geographic areas …
>
> the call processing system coupled to at least one ***switching facility*** of the telecommunications network…

60. The broadest reasonable interpretation of "switching facility" is "any switch in the communication network" (and "switching facilities" is simply the plural). The phrase "switching facility" does not appear in the specification. However, to one of ordinary skill in the art, all switches in a telecommunications network like the PSTN are a "switching facility." This is supported by the "authoritative source of definitions for terms used in the preparation of all telecommunication documentation" for "all Federal departments and agencies" in effect in 1999, the Federal Standard 1037C (Glossary of Telecommunications Terms) (Aug. 7, 1996), which defines "switching facility" and "switching center" as synonyms that broadly mean "a facility in which switches are used to interconnect communications circuits on a circuit-, message-, or packet-switching basis. Synonyms, in telephony, central office, switching exchange, switching facility. Deprecated synonym switch." Ex. 1008 at C-8 (footnote omitted). Notably, this definition does not refer to a particular class of switch; it is the generic, broad term for the location of communication switches of circuits, packets, or messages, and for short, for the switches themselves. *See also* Ex. 1009 at 757 (defining "switching centers" to refer to all five classes of switches in the PSTN).

61. In light of the embodiments displayed in Figures 1 and 2 of the '113 patent in which a Tandem Access Controller is shown directly connected to a

tandem switch (class 4) and not to the CO (central office, the location of a class 5 switch), and in light of the claim also separately referring to "edge switches," Patent Owner may argue that "switching facility" should be interpreted more narrowly to exclude central offices/ edge switches. That, however, is not the broadest reasonable interpretation. Nowhere in the specification did the inventors provide a definition of "switching facilities" that is narrower than the ordinary meaning to those of ordinary skill in the art, such as by defining it to mean "tandem switch," or to mean "all switches other than edge switches." Moreover, as Figures 1 and 2 illustrate, the applicant knew the specific term "tandem switch," which refers to a particular class of switch in the PSTN, but chose to use the broad, generic phrase "switching facility" in the claims. That indicates a deliberate choice of words to broaden the claim beyond the specific embodiments of Figures 1 and 2 involving the tandem switch to include a connection to any kind of switch in the PSTN.

62. In the applicant's February 22, 2010 response in the prosecution history of the related U.S. Patent No. 7,764,777, the applicant argued that the then-pending claims were allowable over the Schwab prior art because (Ex. 1007 at 93-94):

> in Schwab, any 'features' that are applied to calls being routed are via an end office switch (also referred to as an edge switch

> or a central office (CO) switch). The end office switch connects calls from calling (telephone company subscribers) parties to called parties only within a local geographic area. Consistent with Newton's definition, on which the Examiner relies, Schwab's "end office switch" could arguably be considered to be "within" the PSTN. The PSTN is a configuration of switching facilities for routing calls from calling parties to called parties, comprising a plurality of end office switches (also referred to as central office switches or edge switches (e.g., a class 5 switch)) and a plurality of interconnected switching facilities (also referred to as tandem switches)…. Typically, a telephone call involves an originating end office switch, a plurality of tandem switches, and a terminating end office switch. Therefore in Schwab the application of "features" to call routing operations is restricted within the local geographic area of a particular end office switch (local to the calling party that originates the call).

63. This argument to the examiner is notable for a number of reasons. Most relevant here is that it is a clear use ***by the patent applicant*** of the phrase "switching facilities" to include all switches of the PSTN, ***including edge switches***,

confirming the broadest reasonable interpretation set forth above. *Id.* ("The PSTN is a configuration of ***switching facilities*** … ***comprising a plurality of end office switches*** (also referred to as central office switches or ***edge switches*** …) and …")

E. "a call processing system serving as an intelligent interconnection between at least one packet network and a second network coupled to a switching facility of a telecommunications network, the telecommunications network comprising edge switches for routing calls from and to subscribers within a local geographic area and switching facilities for routing calls to other edge switches or other switching facilities local or in other geographic areas" (Claim 1)

64. The broadest reasonable interpretation of this phrase to one of ordinary skill in the art in light of the specification is that the call processing system:

(A) **interconnection:** is directly or indirectly connected to both (1) a packet network (such as the internet) and (2) a telecommunications network that has edge switches that route calls to local subscribers and that has switches that route calls to edge switches and to other switches both local and far (such as the PSTN), and

(B) **intelligent:** can change the route of a call from its originally-dialed telephone number destination.

65. Support for this interpretation with respect to the word "interconnection" can be found above regarding the interpretation of "coupled to." Support for this interpretation with respect to the word "intelligent" can be found in the '113 patent's specification at 5:4-9, which juxtaposes the explanation that TAC 10, an embodiment of the claimed call processing system, can change the route of a call to a subscriber ("it redirects calls to subscribers") with the characterization in the concluding sentence of the paragraph that the TAC "provides ***intelligent interconnection*** between a calling party and a subscriber." Ex. 1001 at 5:4-9 (emphasis added).

66. As explained above, the Internet is an example of a packet network.

67. The broadest reasonable interpretation of the phrase "the telecommunications network comprising edge switches for routing calls from and to subscribers within a local geographic area and switching facilities for routing calls to other edge switches or other switching facilities local or in other geographic areas" is "a communication network that includes edge switches for routing calls to geographically local subscribers and switches for routing calls to edge switches or to other switches local or far, including the PSTN." Alternatively, for purposes of the accompanying petition, this phrase need only be interpreted broadly enough to encompass at least the PSTN.

68. As detailed above, the PSTN, which is the conventional nationwide telephone network, is a communication network that includes edge switches for routing calls to subscribers within the local geographic area of the edge switch. It also includes other switches that route calls to edge switches or to still other switches (which can be relatively local or in distant geographic areas). This is noted by the '113 Patent itself: "The Public Switched Telephone Network (PSTN) consists of a plurality of edge switches connected to telephones on one side and to a network of tandem switches [which is an example of a switching facility] on the other." Ex. 1001, 1:45-51. This is also confirmed by the Patent Owner in a related application: "It is well known that a conventional PSTN includes edge switches (commonly referred to as central office switches or C.O. switches) that originate and terminate calls for connected subscribers, and tandem switches which route these calls internally within the PSTN (i.e. tandem switches are not capable of originating or terminating PSTN calls, but rather directs calls to/from an edge switch or another tandem switch)" Ex. 1019 at 11.

69. Notably, as written, it is hard to make sense of the actual wording of claim 1. If it is the "telecommunications network" that "compris[es] edge switches" and "switching facilities for routing calls to other edge switches or other switching facilities" local or far, then it is the "telecommunications network" that describes the PSTN. Yet the claim states that the "second network" is merely

"***coupled***" to a "switching facility of a telecommunications network…" That suggests that the second network is not itself the "telecommunications network" such as the PSTN. But if the second network is not the telecommunications network/PSTN, what network is it? Furthermore, what then does claim 1 mean when it later recites "receiving call data which is associated with ***a call originated*** by the calling party ***via either the packet network*** [such as the internet in Voice over IP communications] ***or the second network***"? What is the second network from which a call can originate that is neither the packet network nor the PSTN? To arrive at the broadest reasonable interpretation above, I have interpreted the claim language in claim 1 in light of the disclosure of the specification in which the disclosed embodiment of the processing system (the TAC) is repeatedly described as connected to the PSTN and as a system that can receive calls for subscribers from the PSTN. The proposed broadest reasonable interpretation is also consistent with the language in claim 94 that uses a similar but simpler overall sentence structure: "a call processing system serving as an intelligent interconnection between at least one circuit-switched network and a packet network in a telecommunications network." Ex. 1001, Claim 94. By analogy to claim 94, the broadest reasonable interpretation of the "second network" would include the telecommunications network like the PSTN.

F. "tandem access controller"

70. The phrase "tandem access controller" in claims 18 and 19 is not a known term of art in telecommunications. I have assumed for purposes of my analysis that the broadest reasonable construction of "tandem access controller" in light of the specification as set forth in the accompanying petition is correct and that the phrase means a "processor" (or a device with a processor).

G. Summary of Claim Interpretation

Claim Limitation	Broadest Reasonable Interpretation
"web enabled"	"capable of receiving information from, or sending information over, the internet's world wide web"
"coupled to"	"connected either directly or indirectly"
"switching facility" / "switching facilities"	"any switch in the communication network" (and "switching facilities" is simply the plural).
"a call processing system serving as an intelligent interconnection between at least one packet network and a second network coupled to a switching facility	**interconnection:** is directly or indirectly connected to both (1) a packet network (such as the internet) and (2) a telecommunications network that has

of a telecommunications network, the telecommunications network comprising edge switches for routing calls from and to subscribers within a local geographic area and switching facilities for routing calls to other edge switches or other switching facilities local or in other geographic areas"	edge switches that route calls to local subscribers and that has switches that route calls to edge switches and to other switches both local and far (such as the PSTN), and **intelligent:** can change the route of a call from its originally-dialed telephone number destination.
"tandem access controller"	"processor" (or a device with a processor)

VI. SUMMARY OF PRIOR ART

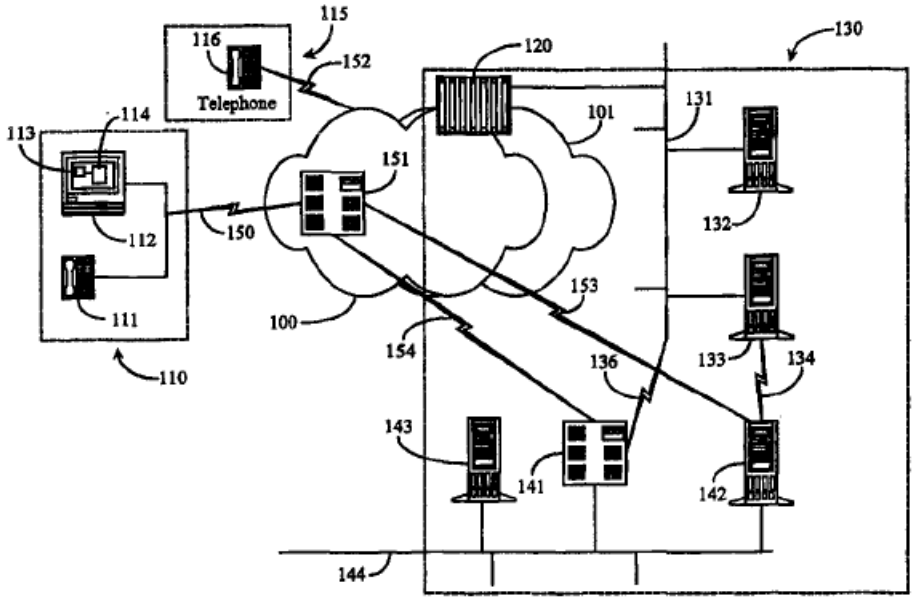
A. Shtivelman: WO 99/14924

71. Shtivelman addresses a problem faced by people using the internet at home in the 1990s. At the time, it was common to access the internet by using a dial-up modem rather than a broadband connection. Dial-up modems used your telephone line to connect your computer to the internet. Thus, while you browsed websites on your computer, you were not able to receive telephone calls because your phone line was being used by your computer.

72. Shtivelman solves that problem by using a call processing system that: (1) is connected to both the PSTN and the internet, and (2) can process a call across both networks. When a user's telephone line is in use because the user is accessing the internet through the phone line, the processing system receives the call from the PSTN, converts the incoming call into Internet Protocol format, and then forwards it as a Voice over IP call through the internet to the user's computer. *See* Ex. 1005 at abstract, 5:13-16, 6:14-19, 7:14-8:16, Figures 1-2.

73. Shtivelman discloses several embodiments.

74. With reference to Figure 1, in one embodiment of Shtivelman, server 142 will control PSTN switch 151:



When a user accesses the internet from his computer 112 using a dial-up modem, tying up his telephone line 150, server 142 will direct PSTN 151 to forward an

incoming call from the PSTN to switch 141. When an incoming call from the PSTN reaches switch 141, it will be converted into Internet Protocol format and then forwarded to the user's computer as a Voice over IP call. Ex. 1005 at Figs. 1 and 2, 12:3-15, 3:21-27, 6:3-9, 7:1-16, 7:28-8:16, 8:27-9:16, and claims 1, 3, 4, 7, and 14.

75. Instead of converting incoming calls into Voice over IP calls and routing them to the user's computer, alternatively, the incoming calls can be forwarded through the PSTN to any conventional telephone number that the user may choose. *Id.* at 9:24-10:4.

76. In another embodiment in Shtivelman, a server (not shown in Figure 1) is connected to both switch 151 and the internet (item 101). Ex. 1005 at 12:16-21, Fig. 1. When a user's phone line (item 15) is being used to access the internet on his computer (item 112), the server will control PSTN switch 151, redirecting incoming calls received at the switch from the PSTN as an Internet Protocol call through the internet to the user's computer as in the prior embodiment. *Id.* at 12:16-26, 6:3-9, Fig. 1.

77. Shtivelman further discloses that this server hosts a WEB page, making it, by definition, a web server. *Id.* at 12:20-21. The user's web browser uses a plug-in to communicate with the web server, informing the server when incoming calls should be redirected to the user through the internet. *Id.* at 5:7-12,

12:21-24; *see also id.* at 8:27-9:3 (user's web browser plug-in receives information when there is an incoming call).

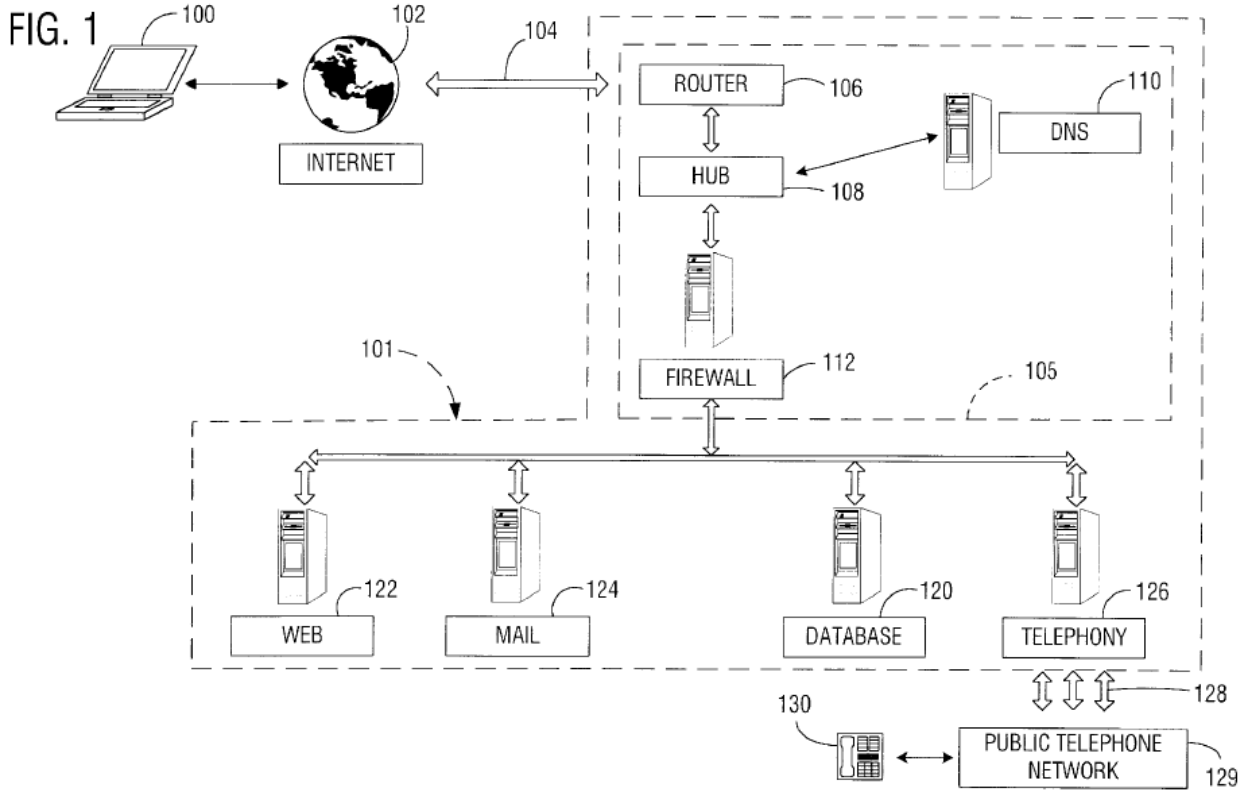
B. O'Neal: U.S. Patent No. 6,463,145

78. O'Neal is a patent that issued to Microsoft entitled "Computer-Implemented Call Forwarding Options And Methods Therefor In A Unified Messaging System." *See* Ex. 1003.

79. O'Neal addresses the same issue that the '113 patent's specification states that it addresses. O'Neal, however, came first.

80. More specifically, O'Neal notes that telephone services have options such as "call forwarding." However, configuring the call forwarding option typically requires the user to enter codes from their telephone. *Id.* at 2:58-3:17. O'Neal discloses a "computer-implemented control center for permitting a subscriber … to customize call forwarding parameters associated with a call forwarding service." The subscriber uses a computer network interface such as "a web page" to configure the call forwarding options, and the chosen parameters are stored in a "profile database." *Id.* at 3:64-4:8, 5:41-47. Subsequent telephone call are processed according to the subscriber's chosen parameters. *Id.* at 4:8-10.

81. The following figure from O'Neal illustrates an embodiment of its system:



82. In O'Neal, a subscriber of the UMS 101 has various communication options for routing of phone calls and other messages (such as faxes, e-mails, and voicemails). Ex. 1003 at 12:66-13:20. Examples of these communication options include "call forwarding", "'follow me' service", or "alternate number service." Ex. 1003 at 11:13-12:65, Figs. 3-4. The subscriber may use a "user computer 100" to access the UMS 101 through a web site over a data-centric network 102 (such as the "Internet"). Ex. 1003 at 16:35-17:10, 5:41-60, Fig. 1. This access allows the subscriber to "review and/or modify [their] communication options." Ex. 1003 at 16:36-64, 7:45-8:22, Fig. 1.

83. For example, with regard to the call forwarding communication option, the subscriber is "able to check whether it is enabled, verify the forwarding number, select a number from a preprogrammed list, add a new number to a preprogrammed list, or enter a temporary number." Ex. 1003 at 5:62-6:9. After the communication option is modified, the modified communication option is "employed to handle subsequent" phone calls. Ex. 1003 at 7:57-65, 9:4-9. The "unified messaging system 101" will receive calls made to the subscriber of the UMS 101 service and "reroute" the call "in accordance with a subscriber's communication option setting", such as by "forwarding" the call to the subscriber via an "alternate number." Ex. 1003 at 9:55-58, 11:40-51, 15:14-43.

84. In particular, when a caller calls the subscriber, the call is routed over the telephony-centric network 129 (such as the "PSTN") and received by the telephony server 126 of the UMS 101. Ex. 1003 at 8:41-62, 9:20-30, 15:14-43, 17:11-49, Fig. 1. The telephony server 126 of the UMS 101 then uses the communication option settings for that subscriber to "decide how to handle the message." Ex. 1003 at 8:41-9:9. For example, if the subscriber has enabled "call forwarding", the "telephony server receives the forwarding number from the database server and initiates an outgoing call (step 706) to the forwarding number on another port (e.g., one of the outgoing lines as seen in FIG. 2)." If "the call is accepted" by the subscriber, the telephony server completes the call by

"connect[ing] the port of the incoming call with the port of the outgoing call." Ex. 1003 at 17:11-49, 11:40-51, Figs. 1, 3-4, and 7. In this manner, the telephony server may reroute the call back through the telephony-centric network 129 (such as the "PSTN") to the subscriber "in accordance with a subscriber's communication option setting." Ex. 1003 at 8:41-62, 9:20-30, 9:55-58, 11:40-51, 15:14-43, 17:11-49, Fig. 1.

85. Also, O'Neal discloses that the subscriber could be using a computer "enable[d] [with] digital/Internet telephony" – which is Voice over IP. The telephony server may reroute the call through the data-centric network 102 (such as the "Internet") to the subscriber "in accordance with a subscriber's communication option setting." Ex. 1003 at 9:55-58, 18:19-23, 19:1-8, Fig. 1.

VII. THERE IS A REASONABLE LIKELIHOOD THAT THE CHALLENGED CLAIMS ARE UNPATENTABLE

86. In my opinion, all of the challenged claims are unpatentable for the reasons set forth in detail below.

A. Ground 1: Claims 1, 2, 8, 15, and 17-19 are Anticipated by Shtivelman

1. Claim 1

[1a] A method performed by a web enabled processing system including one or more web servers coupled to a call processing system:

87. Shtivelman discloses a method performed by a web enabled processing system that includes a web server connected to a call processing system. For example, in one embodiment, server 142 will control PSTN switch 151:

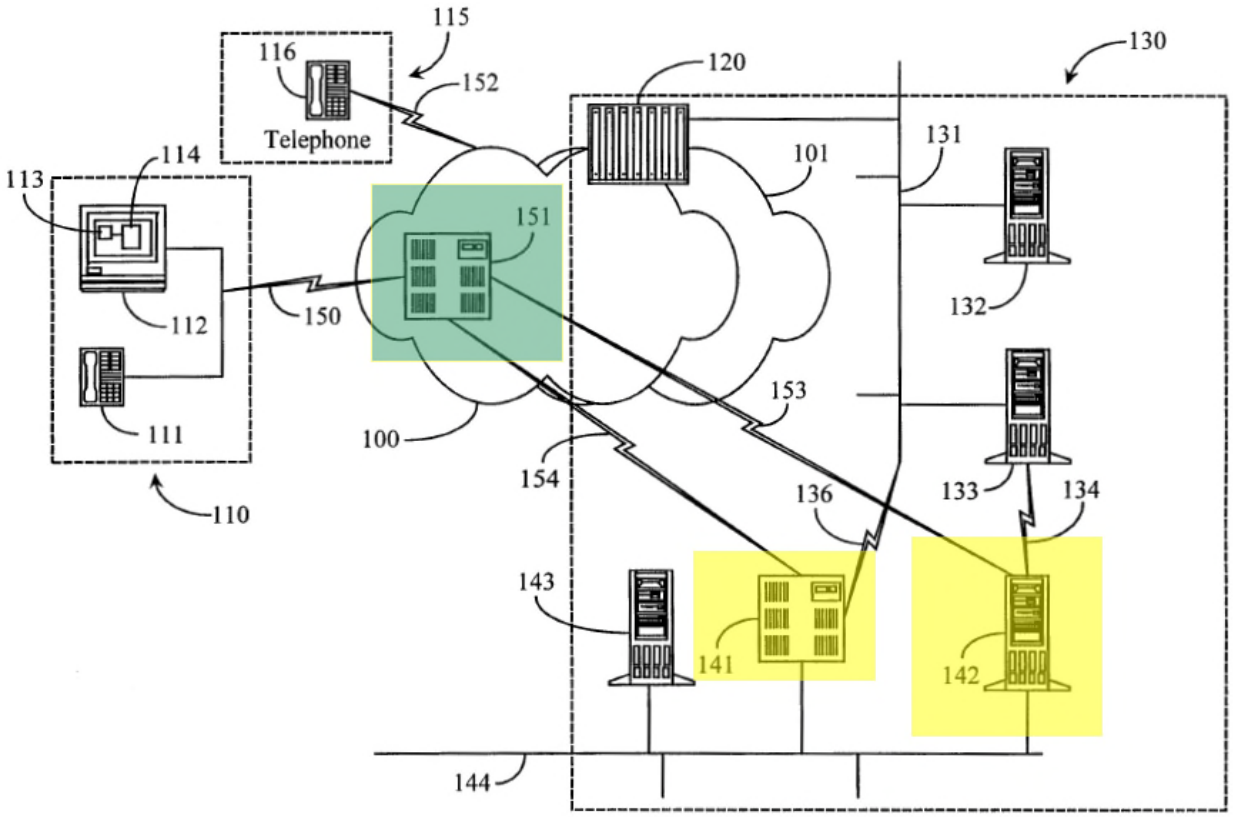


Fig. 1

88. When a user accesses the internet from his computer 112 using a dial-up modem, tying up his telephone line 150, server 142 (which has a processor) will

direct PSTN 151 to forward incoming calls from the PSTN to switch 141. When the call reaches switch 141, it will be converted into Internet Protocol format and forwarded to the user's computer over the internet as a Voice over IP call. Ex. 1005 at Figs. 1 and 2, 12:3-15, 3:21-27, 6:3-9, 7:1-16, 7:28-8:16, 8:27-9:16, and claims 1, 3, 4, 7, and 14.

89. The combination of server 142 and switch 141 in this embodiment are the claimed processing system.

90. Shtivelman further discloses that its processing system sends the user a notification that there is an incoming call to a web browser plug-in. Ex. 1005 at 8:3-9:16. Browser plug-ins give web browsers additional functionality, often to display or otherwise render content. They run from a web browser and are invoked by web pages. *See* Ex. 1011. Inherently, browser plug-ins communicate through the Internet's world wide web with web servers. The component of Shtivelman's disclosed system that sends information to the user's web browser plug-in is thus inherently a web server. Furthermore, the web server must be connected (and thus "coupled") to the processing system because the web server notifies the user that there is an incoming call. The web server would only have that information if it was received from the processing system that performs the call forwarding. Thus, the web server and the processing system must be connected.

91. Another embodiment in Shtivelman explicitly discloses a processing system that includes a web server. In that embodiment, a server (the processing system) is connected to both switch 151 and the internet. Ex. 1005 at 12:16-21, Fig. 1. When a user's phone line is being used to access the internet on his computer, the server will control PSTN switch 151, redirecting incoming calls received at the switch from the PSTN as an Internet Protocol call through the internet to the user's computer as in the prior embodiment. *Id*. at 12:16-26, 6:3-9, 11:10-12:2. The server "hosts a WEB page," making it, by definition, also a web server. *Id.* at 12:16-21. This web server receives information from the user's computer's web browser plug-in notifying the server when incoming calls should be forwarded. *Id.* at 12:20-24. Such communications between a web server and a web browser plug-in will take place over the internet's world wide web. Furthermore, because in this embodiment the web server is embedded within the processing system, they are directly coupled.

92. Shtivelman also discloses yet another embodiment in which (in reference to Shtivelman's Figure 1 above) server 142 controls switch 141. More specifically, the combination of telephony switch 141 and CTI-server (Computer Telephony Integration server, or "T-server") 142, which controls switch 141, is the processing system. *See* Ex. 1005 at 10:26-11:4 ("T-server 142 in this embodiment is a CTI-Server capable of monitoring and directing the activities of switch 141.

T-Server 142 … directs switch 141 to initiate a call to the remote access forwarding number of the client, thereby directing forwarding of incoming calls for the client to a number at switch 141.") Switch 141 routes calls between the public-switched telephone network 100 (the PSTN) and the internet. Ex. 1005 at 6:14-19, 7:1-8:23, 9:3-16. As explained above, the processing system is web enabled because it communicates information through the internet's world wide web. *See* Ex. 1005 at 8:3-9:16.

[1b] serving as an intelligent interconnection between at least one packet network and a second network coupled to a switching facility of a telecommunications network, the telecommunications network comprising edge switches for routing calls from and to subscribers within a local geographic area and switching facilities for routing calls to other edge switches or other switching facilities local or in other geographic areas:

93. In Shtivelman, the switch 141 and server 142 (the processing system) are connected to both the PSTN (more specifically, to switch 151 of the PSTN 100) and to the internet 101, which is a packet network. Ex. 1005 at Fig. 1, 7:1-3, 7:9, 8:3-6, 9:3-16:

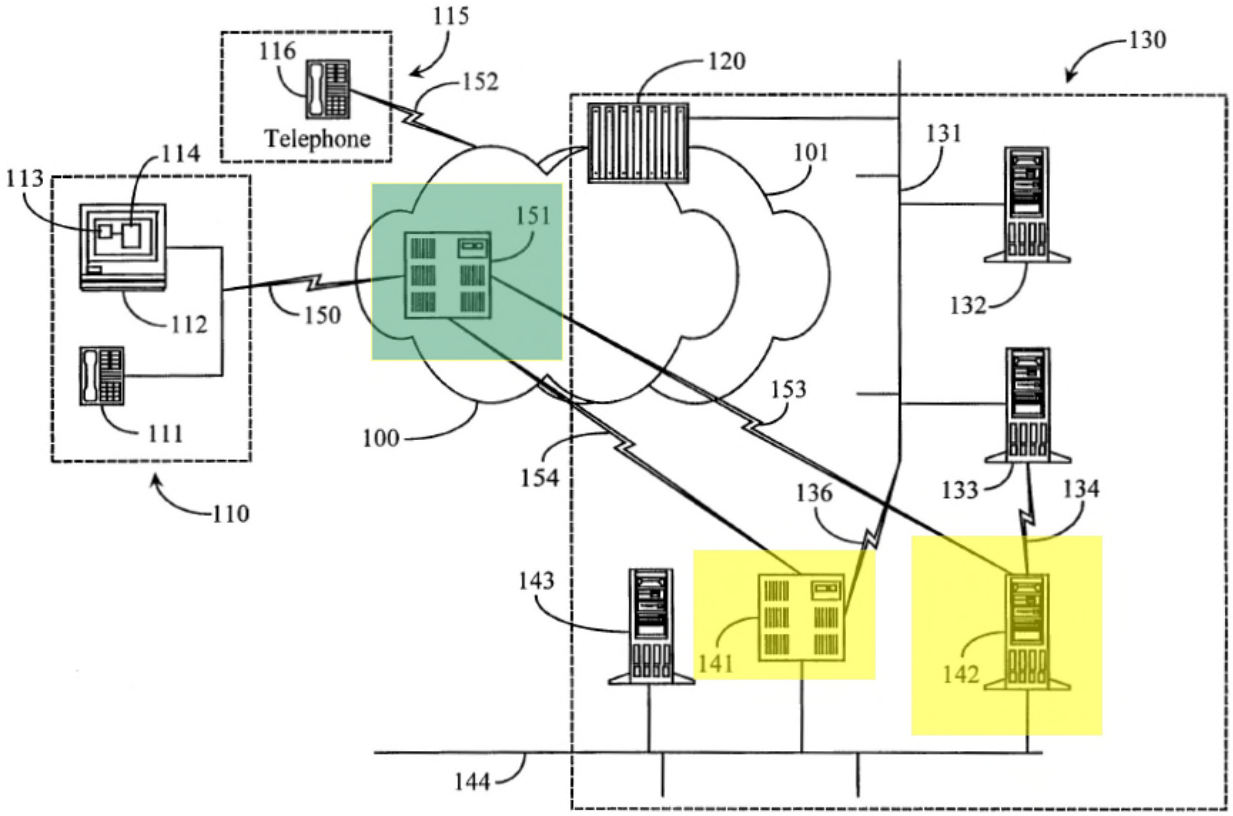


Fig. 1

94. Furthermore, switch 141 and server 142 of Shtivelman serve as an "intelligent interconnection." Switch 141 and server 142 reroute calls from the PSTN from their originally dialed telephone number destination (telephone 111) to the user's computer 112 via the internet. Ex. 1005 at 6:14-19, 7:1-8:23, 9:3-16. Specifically, when the client is on the Internet, the "T-Server 142" will "direct" the PSTN telephony switch 151 to forward the PSTN call to the telephony switch 141, and the telephony switch 141 will then "convert" the PSTN call to a Voice over IP call and "complete[] the IP call to the client" over the Internet. Ex. 1005 at 7:28-8:2, 9:3-16, abstract, 8:12-16, 12:9-15.

95. In the embodiment of Shtivelman described at 12:16-26, a "server" is "connected to switch 151" of the PSTN. Furthermore, that server "is Internet-connected." Still further, the server causes switch 151 "to redirect incoming calls through the Internet to the client." Ex. 1005 at 12:16-62. Thus, in this embodiment, as required by this claim limitation, the server: (1) is connected to both a packet network (the Internet) and the PSTN (more specifically, a switch of the PSTN), and (2) can change the route of a call from its originally-dialed telephone number destination.

[1c] the method for enabling voice communication from a calling party to a called party across both the packet network and the second network, the method comprising the steps of:

96. The call from the calling party (which is a voice communication) comes across the PSTN 100 (the "second network") and is routed across the internet (the packet network) to the user via the user's computer. Ex. 1005 at 7:1-9:16, Fig. 1.

[1d] receiving call data which is associated with a call originated by the calling party via either the packet network or the second network, at the call processing system:

97. As explained above, telephone calls on the PSTN include not just voice communication, but also signaling information, such as the destination

telephone number. In Shtivelman, the call from the PSTN originated by a caller using telephone 116 inherently includes associated call data, including the dialed telephone number. That call data is received via the PSTN 100 through switch 151 (*i.e.*, via the claimed second network) to switch 141, part of the call processing system. Ex. 1005 at Fig. 1, 7:1-9:16.

[1e] the calling party using a communications device to originate the call for the purpose of initiating voice communication:

98. The caller uses "a telephone 116 [to] place[] a PSTN call." Ex. 1005 at 7:14-19.

[1f] the call processing system coupled to at least one switching facility of the telecommunications network via the second network:

99. As illustrated in Figure 1 and as described in the specification of Shtivelman, Shtivelman discloses that switch 141 and server 142 of the call processing system are connected (in fact, directly connected) to switch 151, which is a switching facility of the PSTN. Indeed, Shtivelman explains that switch 151 is "exemplary of switches in the PSTN." Ex. 1005 at 7:6-9, Fig 1. This is the claimed "coupled to."

100. Likewise, in the embodiment of Shtivelman described at 12:16-26, a "server" is "connected to switch 151" of the PSTN. Ex. 1005 at 12:16-26.

101. To the extent that the Patent Owner attempts to argue that the claim phrase "switching facility" excludes edge switches and that switch 151 is an edge switch, Shtivelman still discloses that the call processing system is "coupled to" the required switching facility. The PSTN inherently includes an interconnected network of edge switches and other switches including tandem switches. Thus, the disclosed connections in Shtivelman between the call processing system (switch 141 and server 142 in one embodiment and the server of the embodiment disclosed at 12:16-26) and the switch 151 of the PSTN is at least disclosure of an indirect connection between the call processing system and a tandem switch of the PSTN. This connection suffices to meet the claim's requirement of "coupled to" when given its broadest reasonable interpretation.

[1g] the call processing system processing the call across both the packet network and the second network to complete the call to the called party; and:

102. The telephone switch 141 of the call processing system receives the call from the PSTN 100 (the "second network") and sends it on across the internet (the packet network) to complete the call to the called client at his computer 112, satisfying this limitation. Ex. 1005 at 7:1-9:16, Fig. 1.

[1h] establishing the voice communication between the calling party and the called party after the call is completed, across both the packet network and the second network.:

103. The called party at personal computer 112 may accept the IP call, which will cause the telephony switch 141 to "complete[] the IP call to the client via link 136, sub-net 131, and the client's Internet connection." Ex. 1005 at 9:3-16, 7:1-8:23, 13:3-12, Figs. 1-2. This completes the call, which is a voice communication between the caller (from his telephone 115) and the client, across both the PSTN 100 (the second network) and the internet (the packet network).

2. Claim 2

[2] A method as defined in claim 1, wherein either the calling or the called party is a subscriber of the web enabled processing system:

104. The client who receives calls (the called party) "subscrib[es] to the service" of the "telephony call-waiting system" of Shtivelman. Ex. 1005 at 7:29-8:2.

3. Claim 8

[8] A method as defined in claim 2, further comprising the step of: identifying one or more control criteria associated with the subscriber, wherein the one or more control criteria had been previously provided to the web server, and completing the call in accordance with the control criteria associated with the subscriber and establishing the voice communication only in accordance with the control criteria:

105. "[T]he client ma[y] set his/her routing rules in subscribing to the service to have incoming calls during browsing sessions redirected to a cell phone, an alternate telephone at or near his/her premises, or to some other destination." Ex. 1005 at 7:29-8:2 (emphasis added). These routing rules from the client are the claimed "control criteria associated with the subscriber." The processing system of the Shtivelman embodiments uses these rules to forward calls to the client in accordance with the rules. *Id.* In order to do so, the routing rules must have previously been provided to the processing systems.

4. Claim 15

15. A method as defined in claim 1, wherein the call originated by the calling party via the second network is facilitated using VoIP.

106. In Shtivelman, the call originated by the calling party at telephone 116 via the PSTN (second network) is facilitated by being routed to the user's computer 112 over the internet as a Voice over IP call. Ex. 1005 at 7:1-9:16, 6:3-21, Fig. 1. A digital call over the internet ***is*** Voice over IP. This is a facilitation because the call would not otherwise reach the user in light of the user's telephone line being tied up by his connection to the internet using a dial-up modem. Ex. 1005 at 2:8-27, 5:13-17.

5. Claim 17

[17] A method as defined in claim 1, wherein the call processing system is located within a local service area corresponding to the specified recipient.

107. Shtivelman does not explicitly disclose the location of the processing system in comparison to the recipient of the incoming call. Its location does not matter. The processing system can be in the recipient's house, it can be on the other side of the country, or anywhere in between. It makes no difference because it would work the same either way.

6. Claim 18

[18] A method as defined in claim 1, wherein the call processing system is configured as a tandem access controller.

108. As is discussed above, "tandem access controller" is not a term of art or a known device such as a router or call 5 switch. I have assumed that the phrase "tandem access controller" should be interpreted to mean "a processor." Because a server is a computer and inherently includes a processor, Shtivelman's server 142 (and its server of the embodiment at 12:16-26) includes a processor. *See* Ex. 1005 at 10:26-11:4, Fig. 1 (emphasis added).

109. Furthermore, to the extent the Patent Owner argues that claim 18 requires the "processor" to be coupled to a switching facility such as tandem switch, which seems incorrect in light of those requirements being set forth in

claim 19, they are disclosed by Shtivelman as discussed below in connection with claim 19.

7. Claim 19

[19] A method as defined in claim 18, wherein the tandem access controller is coupled to and operates in conjunction with at least one of the switching facilities located within the telecommunications network.

110. As is discussed above, the switch 141 and server 142 (and its server of the embodiment at 12:16-26) are directly connected to the switch 151, which is one of the switching facilities located within the PSTN (the telecommunications network).

111. Furthermore, at the instruction of server 142, PSTN switch 151 will forward calls intended for the subscriber to switch 141. Ex. 1005 at Fig. 1, 7:14-8:23, 11:10-28. Likewise, in the embodiment at 12:16-26, the server "sets up switch 151 to redirect incoming calls through the Internet to the client." As such, switch 141 and server 142, and the server of the other embodiment, operate in conjunction with the switch 151.

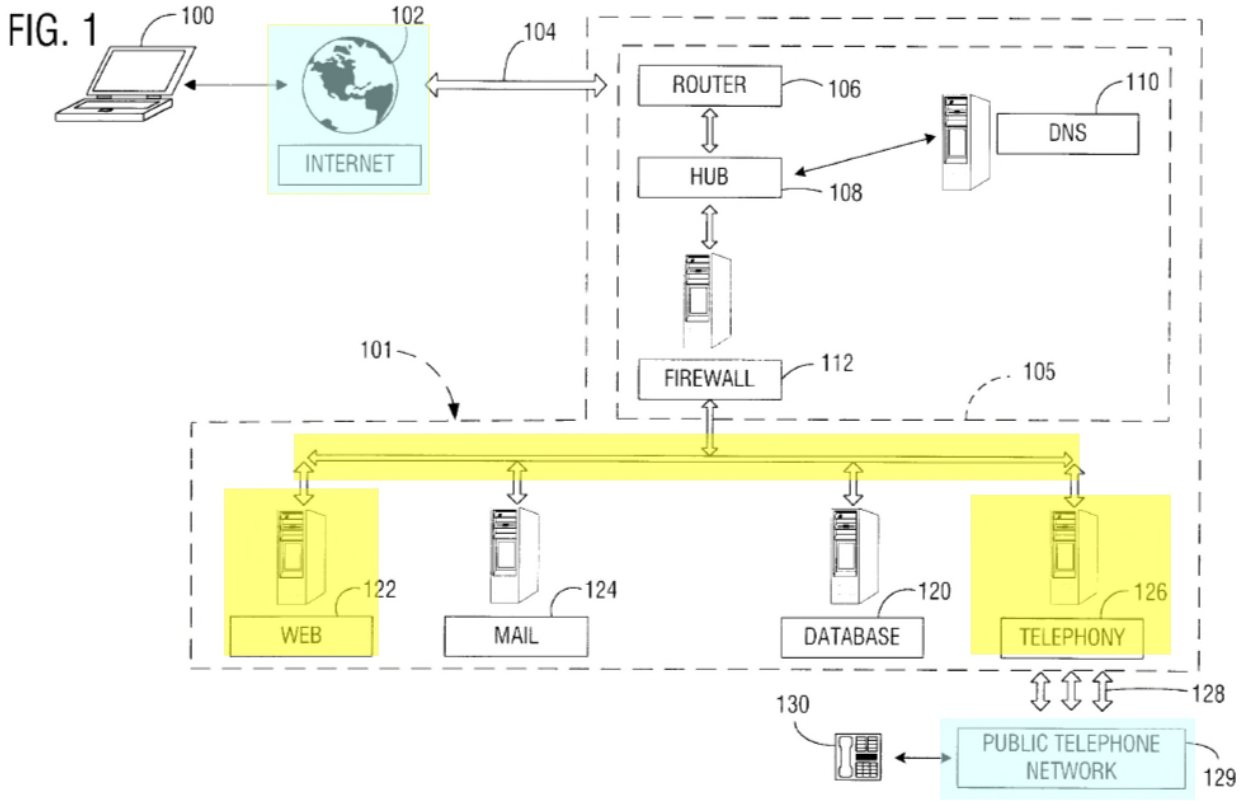
B. Ground 2: Claims 1, 2, 8, 11, and 17-19 are Anticipated by O'Neal

1. Claim 1

[1a] A method performed by a web enabled processing system including one or more web servers coupled to a call processing system:

112. O'Neal discloses a "unified messaging system 101" (UMS 101) that receives a call made to a subscriber of the UMS 101 service, and "reroute[s]" the call "in accordance with a subscriber's communication option setting", such as by "forwarding" the call to the subscriber via an "alternate number." Ex. 1003 at 9:55-58, 11:40-51, 15:14-43. Thus, the UMS 101 is a call processing system.

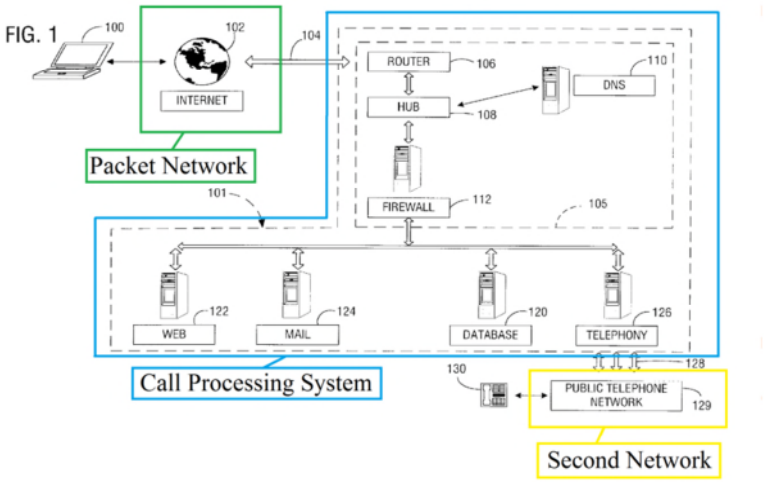
113. More particularly, when a call to a subscriber is received by the telephony server 126 of the UMS 101, the telephony server 126 translates the "telephone signals" of the call into "digital data" and "employs the digital data to decide how to handle the [call] using the communication option settings obtained from the subscriber communication profile database." Ex. 1003 at 8:41-9:9, 13:10-15. Furthermore, "web server 122" is part of the UMS 101 and is connected to telephony server 126:



Ex. 1003 at 8:8-22, 16:35-64, Figs. 1 and 3-4. As such, the UMS 101 is web-enabled and includes web server 122 connected to telephony server 126 that processes calls.

[1b] serving as an intelligent interconnection between at least one packet network and a second network coupled to a switching facility of a telecommunications network, the telecommunications network comprising edge switches for routing calls from and to subscribers within a local geographic area and switching facilities for routing calls to other edge switches or other switching facilities local or in other geographic areas:

114. In O'Neal, the call processing system (here, the UMS 101) serves as an intelligent interconnection between a packet network (here, the data-centric network 102) and the claimed second network (here, the telephony-centric network 129). Ex. 1003 at 5:23-26, 7:6-14, 9:10-19, Fig. 1. As shown in Figure 1 (annotated below), the O'Neal's call process system 101 links the Internet 102 (also called in O'Neal the "data-centric network"), which is a packet network, and the Public Telephone Network 129 (the PSTN, also called in O'Neal the "telephony-centric network)::



Ex. 1003 at Fig. 1 (with annotations). Connections to the PSTN are made with a switch of the PSTN; thus, the connection between the call processing system and the PSTN is inherently a connection to a switching facility of the PSTN.

115. The telephony-centric network 129 of O'Neal includes edge switches and switching facilities. In particular, O'Neal explains that the telephony-centric network 129 is a "Public Service Telephone Network (PSTN)." Ex. 1003 at 9:10-19. As explained above in connection with this claim element in Ground 1, the PSTN includes the claimed edge switches and switching facilities.

116. O'Neal further discloses that the UMS 101 is an "intelligent interconnection" because it reroutes calls between the second network/PSTN and the packet network. Specifically, the UMS 101 "reroute[s]" a call received from the telephony-centric network 129 "in accordance with a subscriber's communication option setting." Ex. 1003 at 9:55-58, 11:40-51, 15:14-43. That this includes rerouting calls from the telephony-centric network 129 (the second network) to the subscriber over the data-centric network 102 (the packet network). is confirmed by the statement in O'Neal that the subscriber can use "any computer that is configured to function as a phone set, i.e., a computer equipped with a speaker, microphone, and appropriate software to enable digital/Internet telephony." Ex. 1003 at 19:1-8 (emphasis added). "Digital/Internet telephony" ***is*** telephony over the packet network (Voice over IP). Calls from the telephony-centric network 129 (e.g., the second network) can therefore be rerouted by the UMS 101 of O'Neal to the subscriber over the data-centric network 102. *See* Ex. 1003 at 9:55-58, 11:40-51, 13:12-13, 15:14-43, 18:18-22, 19:1-8, Fig. 1.

[1c] the method for enabling voice communication from a calling party to a called party across both the packet network and the second network, the method comprising the steps of:

117. As is described above in connection with claim element 1b, the call (which is a voice communication) is routed from the caller to the telephony-centric network 129 (e.g., the second network), to the UMS 101, to the data-centric network 102 (e.g., the packet network), and finally to the subscriber's computer "enable[d with] digital/Internet telephony." Ex. 1003 at 11:40-51, 13:12-13, 15:14-43, 18:18-22, 19:1-8, Fig. 1. Thus, the call goes across both the second network and the packet network.

[1d] receiving call data which is associated with a call originated by the calling party via either the packet network or the second network, at the call processing system:

118. The call (which includes call data associated with a call) from the caller is routed over the telephony-centric network 129 (e.g., the second network) to the UMS 101 (e.g., the call processing system). Ex. 1003 at 9:20-30, 15:14-43, Fig. 1. Thus the call is received via the second network.

[1e] the calling party using a communications device to originate the call for the purpose of initiating voice communication:

119. In O'Neal, the caller uses "a telephone 130" to originate the call to the subscriber. Ex. 1003 at 9:20-30, 15:14-43, Fig. 1.

[1f] the call processing system coupled to at least one switching facility of the telecommunications network via the second network:

120. As is discussed above in connection with claim construction, "coupled to" means connected either directly or indirectly.

121. O'Neal discloses that its call processing system is at least connected indirectly to a switching facility of the telecommunications network (PSTN). Specifically, Figure 1 of O'Neal illustrates that the UMS 101 (e.g., the call processing system) is connected to the telephony-centric network 129, which can be the PSTN. Ex. 1003 at Fig. 1, 9:10-19. The PSTN is a network of interconnected switches, including both edge switches and tandem switches, as is explained above. Therefore, the connection between the UMS 101 and the PSTN provides a direct connection to a switch of the PSTN, and even if "switching facility" were (incorrectly) interpreted to exclude edge switches, the UMS 101 would then have at least an indirect connection to a tandem switch of the PSTN.

[1g] the call processing system processing the call across both the packet network and the second network to complete the call to the called party; and:

122. As is described in *supra* [1b], the call is routed from the caller, over the telephony-centric network 129 (the second network), to the UMS 101, over the

data-centric network 102 (e.g., the packet network), and finally to the subscriber's computer "enable[d with] digital/Internet telephony." Ex. 1003 at 11:40-51, 13:12-13, 15:14-43, 18:18-22, 19:1-8, Fig. 1. Thus, the call is processed across both the packet network and the second network to complete the call to the called party.

[1h] establishing the voice communication between the calling party and the called party after the call is completed, across both the packet network and the second network.:

123. When the UMS 101 is routing the call in accordance with the "call forwarding option," the telephony server of the UMS 101 "initiates an outgoing call (step 706) to the forwarding number on another port … If the outgoing call is successfully connected to the telephony server (step 708), the telephony server then connects the port of the incoming call with the port of the outgoing call (step 710) to complete the end-to-end connection (step 712)." Ex. 1003 at 17:30-49. This completion of the end-to-end connection establishes the voice communication between the calling party and the called party after the call is completed. Additionally, as is explained above in connection with element 1g, the call is processed across both the packet network and the second network to complete the call to the called party.

2. Claim 2

[2] A method as defined in claim 1, wherein either the calling or the called party is a subscriber of the web enabled processing system:

124. In O'Neal, the called party is a subscriber of the UMS 101. Ex. 1003 at abstract ("The call forwarding service being configured to permit the subscriber to specify whether a call received at a telephone number associated with a given account of the call forwarding service be forwarded to a forwarding telephone number") (emphasis added); *see also id.* at 9:55-58, 11:40-51, 15:14-43.

3. Claim 8

[8] A method as defined in claim 2, further comprising the step of: identifying one or more control criteria associated with the subscriber, wherein the one or more control criteria had been previously provided to the web server, and completing the call in accordance with the control criteria associated with the subscriber and establishing the voice communication only in accordance with the control criteria:

125. In O'Neal, a subscriber has one or more "communication options" that are stored by the UMS 101 in a "subscriber communication profile database." Ex. 1003 at 7:45-65. Examples of such communication options include "call forwarding", "'follow me' service", or "alternate number service." Ex. 1003 at 11:13-12:65, Figs. 3-4. These communication options are control criteria.

126. A subscriber "review[s] and/or modif[ies] [their] communication options" through a website / web server 122. Ex. 1003 at 16:36-64, 7:45-8:22, Fig. 1. This allows the subscriber to change their communication options, such as by "enter[ing] a temporary number" to be used for call forwarding. Ex. 1003 at 5:62-6:9, Figs. 3-4. "Properly authorized changes to the communication option settings will be reflected in the communication option settings stored in the subscriber communication profile database and employed to handle subsequent messages (whether incoming or outgoing)." Ex. 1003 at 7:57-65. The "properly authorized … communication option settings" (e.g., control criteria) are "previously provided" because they are used to route "subsequent" calls.

127. The communication options (which are control criteria) are identified when a call is received. For example, when a call to a subscriber is received by the telephony server 126 of the UMS 101, the telephony server 126 translates the "telephone signals" of the call into "digital data", and "employs the digital data to decide how to handle the [call] using the communication option settings obtained from the subscriber communication profile database." Ex. 1003 at 8:41-9:9, 13:10-15 (emphasis added). Also, because the call is handled using the communication options (e.g., control criteria), the call is completed "in accordance with the control criteria" and the voice communication is established "only in accordance with the control criteria."

4. Claim 11

11. A method as defined in claim 1, wherein the web enabled processing system is implemented using a distributed architecture spanning at least two locations.

128. As is explained above, the UMS 101 of O'Neal is the web enabled processing system. Furthermore, O'Neal discloses that the UMS 101 may be implemented on a "SYSTEM DISTRIBUTED OVER A LARGE GEOGRAPHICAL AREA." Ex. 1003 at 6:10-24 (In the aforementioned co-pending patent applications entitled 'INTEGRATED MESSAGE STORAGE AND RETRIEVAL SYSTEM DISTRIBUTED OVER A LARGE GEOGRAPHICAL AREA' (app. Ser. No. 09/239,560, filed Jan. 29, 1999), and 'A SYSTEM AND METHOD FOR PROVIDING UNIFIED MESSAGING TO A USER WITH A THIN WEB BROWSER (app. Ser. No. 09/240,367, filed Jan. 29, 1999), which are all incorporated herein by reference, some inventive unified messaging services and their various features are disclosed. Although the present invention may be implemented on any unified messaging system, reference may be made to the above-mentioned co-pending patent applications for details pertaining to preferable unified messaging systems on which the present invention may be implemented.") (emphases added).

5. Claim 17

[17] A method as defined in claim 1, wherein the call processing system is located within a local service area corresponding to the specified recipient.

129. The UMS 101 in O'Neal can be located within a local service area corresponding to the specified recipient. Indeed, its location does not matter. The processing system can be in the recipient's house, it can be on the other side of the country, or anywhere in between. It makes no difference because it would work the same either way.

6. Claim 18

[18] A method as defined in claim 1, wherein the call processing system is configured as a tandem access controller.

130. As is discussed above in connection with claim construction, I have assumed that the claim limitation "tandem access controller" should be interpreted to mean "a processor" (or a device with a processor). O'Neal discloses that the UMS 101 (the call processing system) includes a processor. Specifically, the UMS 101 is made up of various "servers" (e.g., "telephony server 126", "database server 120", etc.) which process data for the UMS 101. Ex. 1003 at 7:45-51 ("At the heart of the unified message system are a set of servers which are coupled to exchange data and are connected to firewall 112 and the public telephone network. Typically, a server represents a computer that processes data for use by other data-

consumer devices (such as other servers, computers or any of the communication devices through a proper interface circuit)"), 7:51-65, 8:41-62, Fig. 1. As such, the UMS 101 is configured to include a processor.

131. Furthermore, to the extent the Patent Owner argues that this claim limitation also requires the "processor" to be coupled to a switching facility, or a particular type of switch in a particulate manner, such limitations are included in claim 19 of the '113 Patent, not in claim 18. Furthermore, even if such limitations were required by Claim 18, such limitations are also disclosed by O'Neal, as is discussed below with regard to Claim 19.

7. Claim 19

[19] A method as defined in claim 18, wherein the tandem access controller is coupled to and operates in conjunction with at least one of the switching facilities located within the telecommunications network.

132. O'Neal discloses that the UMS 101 (the claimed tandem access controller) is connected to the PSTN, and thus at least connected indirectly to a switching facility. Specifically, Figure 1 of O'Neal illustrates that the UMS 101 is connected to the telephony-centric network 129. Ex. 1003 at Fig. 1. This telephony-centric network 129 is the PSTN (Ex. 1003 at 9:10-19), and the PSTN includes edge switches and switching facilities, as explained above. Because the PSTN is a network of interconnected switches including edge switches and tandem

switches, the connection between the UMS 101 and the PSTN provides at least an indirect connection to a switching facility of the PSTN.

133. Additionally, O'Neal discloses that the UMS 101 operates in conjunction with at least one of the switching facilities located within the telecommunication network. In particular, O'Neal discloses that a call made to the subscriber is routed over the telephony-centric network 129 (the telecommunication network) to the UMS 101 (the tandem access controller), and that UMS 101 can route the call to the subscriber back over the telephony-centric network 129 "in accordance with a subscriber's communication option setting". Ex. 1003 at 8:41-62, 9:20-30, 11:40-51, 15:14-43, 17:11-49, Fig. 1. By routing the call back over the telephony-centric network 129 to the subscriber, the UMS 101 is operating in conjunction with each of the switches (including edge switches and switching facilities) positioned between the UMS 101 and the subscriber.

134. For example, the UMS 101 will "initiate[] an outgoing call … to the forwarding number" of the subscriber (Ex. 1003 at 17:11-49), which will cause the edge switches and switching facilities to use this forwarding number (e.g., the telephone signals associated with the forwarding number) to route the outgoing call through the telephony-centric network 129 to the subscriber. Thus, the UMS 101 operates in conjunction with the switching facilities of the telephony-centric network 129 to route calls to the subscriber.

C. Ground 3: Claims 1, 11, and 15-17 Are Obvious In Light Of O'Neal

1. Claim 1

135. As is discussed above with regard to Claim 1, O'Neal discloses that the UMS 101 reroutes calls between the second network/PSTN and the packet network. However, to the extent that it is argued that O'Neal does not expressly disclose a call being routed between the second network/PSTN and the packet network, this is obvious in light of O'Neal. Even the '113 Patent admits that routing calls over a packet network (e.g., a voice over IP call) was well known prior to the '113 Patent. Ex. 1001 at 2:51-54 (discussing prior art "Voice Over Internet Protocol (VoiP) products"). Furthermore, O'Neal also discloses a call made over a packet network when it explains that a subscriber can use a computer "enable[d] [with] digital/Internet telephony" to make VoIP telephone calls. Ex. 1003 at 19:1-8. Such "digital/Internet telephone" ***is*** a call made over the packet network.

136. It would have been obvious to one of ordinary skill in the art to modify O'Neal so that the "outgoing call" made by the UMS to the subscriber (the call made by the unified messaging system to the subscriber's chosen call forwarding number) is made on the data-centric network 102 (i.e., the packet network), thereby disclosing the limitations of claim 1. Such a modification would

have been known to one of ordinary skill in the art to improve the system of O'Neal because it would allow subscribers to have their calls forwarded to their IP telephone devices (such as a computer "enable[d] [with] digital/Internet telephony" (Ex. 1003 at 19:1-8)). Such a modification would allow the subscriber to receive phone calls "***without regard to the communication devices and/or networks employed for the transmission of the messages***," an explicitly stated goal of O'Neal. Ex. 1003 at 18:18-22; 13:12-13 (emphasis added).

137. This modification would also lead to predictable results. Specifically, such a modification would allow a subscriber to set up the UMS 101 to forward their calls to the subscriber's IP device, and would further allow the subscriber to communicate with the caller using their IP device.

138. Also, such a modification would merely involve modifying the UMS 101 so that the outgoing call made by the UMS 101 to the subscriber (*e.g.*, Ex. 1003 at 17:11-49) could be made over the data-centric network 102 (the "Internet") to the subscriber's IP device. This modification would be well within the skill of a person of ordinary skill in the art. In fact, the simplicity of this modification is confirmed by the fact that the UMS 101 of O'Neal can already communicate with the subscriber's IP device (*i.e.*, the subscriber's computer "enable[d] [with] digital/Internet telephony") over the data-centric network 102. Ex. 1003 at 19:1-8; Fig. 1.

139. Therefore, in my opinion, it would have been obvious to one of ordinary skill in the art to modify O'Neal so that the "outgoing call" made by the UMS to the subscriber (the call made by the unified messaging system to the subscriber's chosen call forwarding number) is made on the data-centric network 102 (i.e., the packet network), thereby disclosing the limitations of claim 1.

2. Claim 11

140. To the extent it is argued that O'Neal does not disclose the limitation of claim 11 ("wherein the web enabled processing system is implemented using a distributed architecture spanning at least two locations"), claim 11 is obvious in light of O'Neal. Using a distributed architecture in both telecommunications networks and in computer networks was a well-known design choice by July 1999. Indeed, the PSTN is a massive distributed architecture. There is nothing nonobvious about implementing a call processing system using a distributed architecture in multiple locations, as illustrated by the fact that the specification of the '113 patent has essentially no description of implementing the web enabled processing system using a distributed architecture spanning at least two locations other than the presence of two boxes labeled "TAC" in Figure 2. Using a distributed architecture in two different locations would bring predictable benefits such as redundancy in case of a hardware failure at one location, particularly due to an environmental reason affecting one location such as a flood.

3. Claim 15

15. A method as defined in claim 1, wherein the call originated by the calling party via the second network is facilitated using VoIP.

141. Although O'Neal discloses each of the limitations of Claim 1 (as explained above), O'Neal does not expressly disclose that the call made by the caller (using telephone 130) is "facilitated using VoIP." However, it would have been obvious to modify O'Neal to disclose these limitations.

142. Specifically, VoIP and VoIP products (such as VoIP telephones) were well known at the time of the invention, as is even admitted by the '113 Patent. Ex. 1001 at 2:51-54 (discussing prior art "Voice Over Internet Protocol (VoiP) products").

143. Furthermore, O'Neal itself discusses the ability to use a computer "enable[d] [with] digital/Internet telephony" to make VoIP telephone calls, disclosing that the subscriber may use "any computer that is configured to function as a phone set, i.e., a computer equipped with a speaker, microphone, and appropriate software to enable digital/Internet telephony". Ex. 1003 at 19:1-8. Digital/Internet telephone ***is*** Voice over IP.

144. Thus, facilitating the call that originated from the calling party on the second network (the PSTN) using VoIP is obvious in light of O'Neal. The UMS 101 would operate in the exact same way to intercept the call from the PSTN, and

then would forward it as a Voice over IP call to the disclosed subscriber's computer enabled for digital/Internet telephony through its disclosed connection to the internet (item 102 in Figure 1). The call made by the caller would then be facilitated by VoIP.

145. Furthermore, O'Neal itself provides motivation for this modification, because it explains that "[t]he unified messaging system [101] allows messages [(such as "telephone call[s]")] to be received, stored, retrieved, and/or forwarded without regard to the communication devices and/or networks employed for the transmission of the messages." Ex. 1003 at 18:18-22, 13:12-13 (emphasis added).

4. Claim 16

16. A method as defined in claim 15, wherein the call is originated and completed using VOIP, but has at least one leg through the second network.

146. It would have been obvious to one of ordinary skill in the art to modify O'Neal to disclose the limitation of claim 16. Specifically, as is discussed above in connection with claim 15, it would have been obvious to modify O'Neal so that calls are completed using Voice over IP.

147. Furthermore, O'Neal discloses that its UMS 101 works with any type of communications network and device: "The unified messaging system [101] allows messages [(including "telephone call[s]")] to be received, stored, retrieved, and/or forwarded without regard to the communication devices and/or networks

employed for the transmission of the messages." Ex. 1003 at 18:18-22, 13:12-13 (emphasis added).

148. Thus, just as O'Neal could be modified so that calls are completed using Voice over IP, calls processed by the system of O'Neal can originate from a Voice over IP call as well. In such a case, the caller would use the same type of Internet telephony-equipped computer as O'Neal discloses for the subscriber.

149. Furthermore, the conversion of a call between the circuit-switched based protocols of the PSTN and the packet-switched based protocols of Voice over IP were well known and within the skill of one of ordinary skill in the art by June 1999, as illustrated by the '113 patent's lack of any disclosure regarding how to perform such conversions as a call travels from the PSTN to the Internet or vice versa. Thus, the system of O'Neal would work the exact same way if a call that originates as a Voice over IP call and is completed as a Voice over IP call travels through the PSTN during one leg of the call. For example, a Voice over IP call from a caller that was routed over the PSTN before reaching the UMS 101, and that was then forwarded to the subscriber as a Voice over IP call, would meet the limitation of claim 16, and would be obvious to one of ordinary skill in the art in light of O'Neal.

5. Claim 17

[17] A method as defined in claim 1, wherein the call processing system is located within a local service area corresponding to the specified recipient.

150. If not anticipated by O'Neal, the limitation of claim 17 is obvious in light of O'Neal. The location of the UMS 101 compared to the location of the specified recipient does not matter. The processing system can be in the recipient's house, it can be on the other side of the country, or anywhere in between. It makes no difference because it would work the same either way. There is nothing special, unexpected, or nonobvious about locating the system within a local service area corresponding to the specified recipient.

D. Ground 4: Claims 1, 2, 8, 15, and 17-19 Are Obvious over Shtivelman in Light of O'Neal

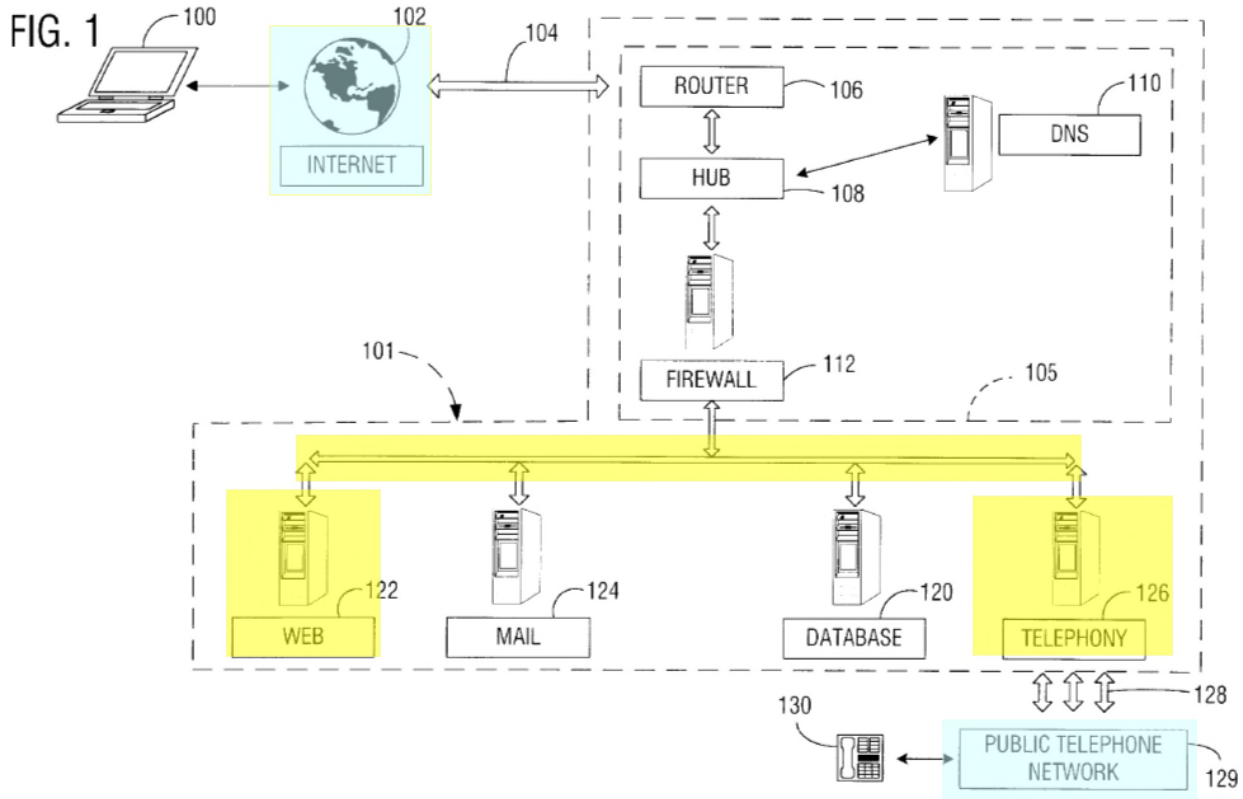
1. Claim 1

151. As is discussed above with regard to Ground 1 claim 1, Shtivelman discloses each of the limitations of claim 1. However, to the extent that it is argued that Shtivelman does not disclose the web-related features of claim 1 such as "***a web enabled processing system including one or more web servers coupled to a call processing system***", those features are disclosed by O'Neal.

152. In particular, O'Neal discloses "a computer-implemented control center for permitting a subscriber of a unified messaging system to customize call

forwarding parameters associated with a call forwarding service." Ex. 1003 at 3:50-53. The unified messaging system (UMS) of O'Neal may receive an "outgoing call" made to a subscriber of the UMS service, and the UMS may "reroute[]" the outgoing call "out of the unified messaging system in accordance with a subscriber's communication option setting," such as by "forwarding" the call to the subscriber via an "alternate number." Ex. 1003 at Ex. 9:55-58, 11:40-51, 15:14-43.

153. As depicted in Figure 1, in O'Neal, "[a] web server 122 is employed to facilitate interaction between unified messaging system 101 and data-centric network 102" such as the internet:



Ex. 1003 at 8:8-22, Fig. 1. As depicted in the Figure and described in O'Neal, the web server 122 is connected (coupled) to telephony server 126 of the unified messaging system, allowing the subscriber in O'Neal to view and change their "communication option settings" (such as call forwarding) through the world wide web over the internet. *Id*. The telephony server 126 of the UMS 101 then uses the communication option settings for that subscriber to "decide how to handle the message." Ex. 1003 at 8:41-9:9. For example, if the subscriber has enabled "call forwarding", the "telephony server receives the forwarding number from the database server and initiates an outgoing call (step 706) to the forwarding number on another port (e.g., one of the outgoing lines as seen in FIG. 2)." If "the call is accepted" by the subscriber, the telephony server completes the call by "connect[ing] the port of the incoming call with the port of the outgoing call." Ex. 1003 at 17:11-49, 11:40-51, Figs. 1, 3-4, and 7. In this manner, the telephony server may reroute the call back through the telephony-centric network 129 (such as the "PSTN") to the subscriber "in accordance with a subscriber's communication option setting." Ex. 1003 at 8:41-62, 9:20-30, 9:55-58, 11:40-51, 15:14-43, 17:11-49, Fig. 1.

154. It would have been obvious to one of ordinary skill in the art by June 1999 to modify Shtivelman with O'Neal to couple the telephony switch 141 of Shtivelman to a web server as in O'Neal so as to "allow a subscriber of various

communication services to review and customize his communication options, in an interactive and simplified manner, via either the data-centric network or the telephony-centric network." Ex. 1003 at 1:52-57. The telephony switch 141 is already disclosed as connected to the internet, and Shtivelman already discloses hosting of a web page in connection with its system. Ex. 1003 at 12:20-21. Shtivelman also already discloses the need for a user to be able to set communication options including a call forwarding number: "[T]he client ma[y] set his/her routing rules in subscribing to the service to have incoming calls during browsing sessions redirected to a cell phone, an alternate telephone at or near his/her premises, or to some other destination." Ex. 1005 at 7:29-8:2 (emphasis added)

155. As explained above in connection with the background of the '113 Patent, by 1999, web sites were very popular. It was known to those of ordinary skill in the art that using the hosted web page already disclosed in Shtivelman (Ex. 1005 at 12:16-26), or that connecting server 142 to a web server, to provide a website for users to view and set their communications options as in O'Neal would predictably provide all the advantages set forth in O'Neal. Such known advantages include making it simple and easy for subscribers to view and modify their communication settings.

2. Claims 2, 8, 15, 17, 18, 19

156. Dependent claims 2, 8, 15, 17, 18, 19 are also obvious in view of Shtivelman combined with O'Neal. Shtivelman discloses the limitations added by each of these claims, as is explained above in connection with Ground 1 concerning those claims.

157. To the extent it is argued that the limitation of claim 8 "wherein the one or more control criteria had been previously provided to the web server" is not disclosed in Shtivelman, it is disclosed in O'Neal as discussed above in connection with Ground 2 claim 1. Ex. 1003 at 8:8-22, 16:35-17:10, Fig. 1.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information or 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 Section 1001 of Title 18 of the United States Code.

Dated: 6/23/2016

Tal Lavian, Ph.D.