

UNITED STATES PATENT AND TRADEMARK OFFICE

---

**BEFORE THE PATENT TRIAL AND APPEAL BOARD**

---

GOOGLE LLC, SAMSUNG ELECTRONICS CO. LTD.,  
AND SAMSUNG ELECTRONICS AMERICA, INC.,  
Petitioner

v.

MULTIMODAL MEDIA LLC,  
Patent Owner.

---

Case No. IPR2024-00056  
U.S. Patent No. 7,929,949

---

**DECLARATION OF DR. BENJAMIN B. BEDERSON IN SUPPORT OF  
PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 7,929,949**

## TABLE OF CONTENTS

|                                                                                         | Page |
|-----------------------------------------------------------------------------------------|------|
| I. INTRODUCTION .....                                                                   | 1    |
| II. BACKGROUND AND QUALIFICATIONS .....                                                 | 2    |
| III. INFORMATION CONSIDERED .....                                                       | 9    |
| IV. RELEVANT LEGAL STANDARDS .....                                                      | 9    |
| A. Claim Interpretation .....                                                           | 9    |
| B. Perspective of One of Ordinary Skill in the Art.....                                 | 10   |
| C. Obviousness.....                                                                     | 10   |
| V. LEVEL OF ORDINARY SKILL IN THE ART .....                                             | 13   |
| VI. SUMMARY OF MY OPINIONS .....                                                        | 14   |
| VII. TECHNOLOGICAL BACKGROUND .....                                                     | 15   |
| A. Recipient Addressing Techniques.....                                                 | 15   |
| B. Click-Through Techniques.....                                                        | 18   |
| C. Client-Server Structures .....                                                       | 20   |
| VIII. THE ‘949 PATENT AND ITS FILE HISTORY .....                                        | 24   |
| IX. CLAIM CONSTRUCTION .....                                                            | 26   |
| A. “multimodal message” and “interactive multimodal message”<br>(Claims 1-2, 4, 9)..... | 27   |
| B. “service information” (Claims 1, 5) .....                                            | 27   |
| C. “client application” (Claim 1) .....                                                 | 28   |
| D. “pointer” (Claim 1).....                                                             | 30   |
| X. OVERVIEW OF THE APPLIED PRIOR ART REFERENCES .....                                   | 30   |
| A. Still (Ex-1008).....                                                                 | 30   |
| B. Mumick’046 (Ex-1010).....                                                            | 33   |
| C. Levkovitz (Ex-1009) .....                                                            | 35   |
| XI. DETAILED EXPLANATION OF THE UNPATENTABILITY<br>GROUNDS .....                        | 37   |

**TABLE OF CONTENTS**  
(continued)

|                                                                                                                                                                                                                                 | <b>Page</b> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| A. Grounds 1-2: Claims 1-2, 4-5, and 9 are rendered obvious by Still alone or Still in view of Levkovitz.....                                                                                                                   | 37          |
| 1. A POSITA would have been motivated to combine Still and Levkovitz and had a reasonable expectation of success .....                                                                                                          | 37          |
| 2. Independent Claim 1 .....                                                                                                                                                                                                    | 42          |
| a. Element 1[pre]: A method of enabling a recipient to interact with an interactive multimodal message triggered on a mobile device of said recipient, comprising the steps of:.....                                            | 42          |
| b. Element 1[a]: creating said interactive multimodal message by a sender using a client application available to said sender, wherein said created interactive multimodal message is stored at a server; .....                 | 45          |
| c. Element 1[b]: sending a notification comprising a pointer to said stored interactive multimodal message to said mobile device of the recipient by said server; .....                                                         | 58          |
| d. Element 1[c]: triggering the stored interactive multimodal message on the mobile device of the recipient by accessing said pointer in said notification; and.....                                                            | 67          |
| e. Element 1[d]: transmitting service information to the mobile device of the recipient through said triggered interactive multimodal message;.....                                                                             | 74          |
| f. Element 1[e]: whereby the interactive multimodal message triggered on the mobile device enables said recipient interaction.....                                                                                              | 79          |
| 3. Dependent Claim 2: The method of claim 1, wherein the recipient triggers the interactive multimodal message using on[e] or more of dual-tone multi frequency dialogs, prompts in voice extensible markup language, automated |             |

**TABLE OF CONTENTS**  
(continued)

|                                                                                                                                                                                                                 | <b>Page</b> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| speech recognition, and a hypertext transfer protocol post.<br>.....                                                                                                                                            | 80          |
| 4. Dependent Claim 4: The method of claim 1, wherein the interactive multimodal message is triggered on activating a link in a text message on the mobile device by the recipient.....                          | 83          |
| 5. Dependent Claim 5: The method of claim 1, wherein said transmitted service information provides the recipient with one or more options, wherein the recipient selects one of said provided options. ....     | 91          |
| 6. Dependent Claim 9: The method of claim 1, further comprising the step of forwarding the interactive multimodal message to a plurality of second recipients simultaneously. ....                              | 98          |
| B. Grounds 3-4: Claims 1-2, 4-5, and 9 are rendered obvious by Mumick’046 alone or Mumick’046 in view of Levkovitz .....                                                                                        | 105         |
| 1. A POSITA would have been motivated to combine Mumick’046 and Levkovitz and had a reasonable expectation of success.....                                                                                      | 105         |
| 2. Independent Claim 1 .....                                                                                                                                                                                    | 111         |
| a. Element 1[pre]: A method of enabling a recipient to interact with an interactive multimodal message triggered on a mobile device of said recipient, comprising the steps of:.....                            | 111         |
| b. Element 1[a]: creating said interactive multimodal message by a sender using a client application available to said sender, wherein said created interactive multimodal message is stored at a server; ..... | 114         |
| c. Element 1[b]: sending a notification comprising a pointer to said stored interactive multimodal message to said mobile device of the recipient by said server; .....                                         | 128         |

**TABLE OF CONTENTS**  
(continued)

|                                                                                                                                                                                                                                                                                                  | <b>Page</b> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| d. Element 1[c]: triggering the stored interactive multimodal message on the mobile device of the recipient by accessing said pointer in said notification; and.....                                                                                                                             | 134         |
| e. Element 1[d]: transmitting service information to the mobile device of the recipient through said triggered interactive multimodal message;.....                                                                                                                                              | 140         |
| f. Element 1[e]: whereby the interactive multimodal message triggered on the mobile device enables said recipient interaction.....                                                                                                                                                               | 146         |
| 3. Dependent Claim 2: The method of claim 1, wherein the recipient triggers the interactive multimodal message using on[e] or more of dual-tone multi frequency dialogs, prompts in voice extensible markup language, automated speech recognition, and a hypertext transfer protocol post. .... | 147         |
| 4. Dependent Claim 4: The method of claim 1, wherein the interactive multimodal message is triggered on activating a link in a text message on the mobile device by the recipient.....                                                                                                           | 152         |
| 5. Dependent Claim 5: The method of claim 1, wherein said transmitted service information provides the recipient with one or more options, wherein the recipient selects one of said provided options. ....                                                                                      | 157         |
| 6. Dependent Claim 9: The method of claim 1, further comprising the step of forwarding the interactive multimodal message to a plurality of second recipients simultaneously. ....                                                                                                               | 164         |
| XII. CONCLUSION.....                                                                                                                                                                                                                                                                             | 173         |

**LIST OF EXHIBITS**

|         |                                                                                                                                                                                               |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex-1001 | U.S. Patent No. 7,929,949                                                                                                                                                                     |
| Ex-1002 | Declaration of Dr. Benjamin B. Bederson                                                                                                                                                       |
| Ex-1003 | Curriculum Vitae of Dr. Benjamin B. Bederson                                                                                                                                                  |
| Ex-1004 | File History of U.S. Patent No. 7,929,949                                                                                                                                                     |
| Ex-1005 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1006 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1007 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1008 | U.S. Patent Publication No. 2008/0182603 (“Still”)                                                                                                                                            |
| Ex-1009 | U.S. Patent Publication No. 2007/0088852 (“Levkovitz”)                                                                                                                                        |
| Ex-1010 | U.S. Patent Publication No. 2008/0004046 (“Mumick’046”)                                                                                                                                       |
| Ex-1011 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1012 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1013 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1014 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1015 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1016 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1017 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1018 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1019 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1020 | INTENTIONALLY LEFT BLANK                                                                                                                                                                      |
| Ex-1021 | <i>Multimodal Media LLC v. Guangdong Oppo Mobile Telecommunications Corp., Ltd.</i> , 2:21-cv-00436, D.I. 65 (E.D. Tex. Apr. 24, 2023) (Claim Construction Order) (“ <i>Oppo</i> Litigation”) |

|         |                                                                                                                                                                                                                                                                                                                                      |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex-1022 | <i>Multimodal Media LLC v. TCL Technology Group Corporation et al.</i> , 2:22-cv-00463, D.I. 23 (E.D. Tex. Feb. 22, 2023) (Stay Order) (“TCL litigation”)                                                                                                                                                                            |
| Ex-1023 | Multimodal Media LLC v. Samsung Electronics Co., Ltd. et al., 2:22-cv-00462, Infringement Contentions (E.D. Tex. May 30, 2023) (“Samsung Infringement Contentions”)                                                                                                                                                                  |
| Ex-1024 | INTENTIONALLY LEFT BLANK                                                                                                                                                                                                                                                                                                             |
| Ex-1025 | Alok Sinha, Client-server computing (1992), Communications of the ACM, 35, 7 (July 1992), 77–98, DOI: <a href="https://doi.org/10.1145/129902.129908">https://doi.org/10.1145/129902.129908</a>                                                                                                                                      |
| Ex-1026 | Benjamin B. Bederson & James D. Hollan, Pad++: A Zooming Graphical Interface for Exploring Alternate Interface Physics, UIST ‘94 Proceedings of the 7th Annual ACM Symposium on User Interface Software and Technology 17 (1994), DOI: <a href="http://dx.doi.org/10.1145/192426.192435">http://dx.doi.org/10.1145/192426.192435</a> |
| Ex-1027 | Tim Berners-Lee, Robert Cailliau, Ari Luotonen, Henrik Frystyk Nielsen, and Arthur Secret, The World-Wide Web (1994), Communications of the ACM 37, 8 (August 1994), 76-82, DOI: <a href="http://dx.doi.org/10.1145/179606.179671">http://dx.doi.org/10.1145/179606.179671</a>                                                       |
| Ex-1028 | Sony Ericsson Z520a Manual (2005), available at: <a href="https://theinformr.com/downloads/phones/manuals/sony-ericsson-z520a-manual.pdf">https://theinformr.com/downloads/phones/manuals/sony-ericsson-z520a-manual.pdf</a>                                                                                                         |
| Ex-1029 | C.J. Date, An Introduction to Database Systems at 8 (7th ed. 2000)                                                                                                                                                                                                                                                                   |
| Ex-1030 | Nokia 3250 User Guide (2006), available at: <a href="https://ia801806.us.archive.org/32/items/manualzilla-id-5923903/5923903.pdf">https://ia801806.us.archive.org/32/items/manualzilla-id-5923903/5923903.pdf</a>                                                                                                                    |
| Ex-1031 | David Dearman, Amy Karlson, Brian Meyers, and Ben Bederson, Multi-modal text entry and selection on a mobile device (2010), In Proceedings of Graphics Interface 2010 (GI ‘10), Canadian Information Processing Society, CAN, 19–26                                                                                                  |
| Ex-1032 | AOL Instant Messenger Registration page (1999), available at: <a href="https://web.archive.org/web/19991127133324/http://aim.aol.com/?promo=106712&amp;pageset=Aim">https://web.archive.org/web/19991127133324/http://aim.aol.com/?promo=106712&amp;pageset=Aim</a>                                                                  |

|         |                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ex-1033 | Newsroom, Apple Reinvents the Phone with iPhone (Jan. 9, 2007), available at: <a href="https://www.apple.com/newsroom/2007/01/09Apple-Reinvents-the-Phone-with-iPhone/">https://www.apple.com/newsroom/2007/01/09Apple-Reinvents-the-Phone-with-iPhone/</a>                                                                                                                                                      |
| Ex-1034 | INTENTIONALLY LEFT BLANK                                                                                                                                                                                                                                                                                                                                                                                         |
| Ex-1035 | INTENTIONALLY LEFT BLANK                                                                                                                                                                                                                                                                                                                                                                                         |
| Ex-1036 | INTENTIONALLY LEFT BLANK                                                                                                                                                                                                                                                                                                                                                                                         |
| Ex-1037 | INTENTIONALLY LEFT BLANK                                                                                                                                                                                                                                                                                                                                                                                         |
| Ex-1038 | RealPlayer 8 Plus User Manual (Rev. 1.0) (2000), available at: <a href="https://www.itya.unam.mx/computo/sites/manuales/realplayer/rp8manualfull.pdf">https://www.itya.unam.mx/computo/sites/manuales/realplayer/rp8manualfull.pdf</a>                                                                                                                                                                           |
| Ex-1039 | The Wayback Machine Archive, Pine Information Center, Frequently Asked Questions, University of Washington (Oct. 4, 2000), available at: <a href="https://web.archive.org/web/20010410095757/http://www.washington.edu/pine/faq/sendreceive.html">https://web.archive.org/web/20010410095757/http://www.washington.edu/pine/faq/sendreceive.html</a>                                                             |
| Ex-1040 | Nokia 9300 User Guide (2005), available at: <a href="https://www.manualslib.com/download/756822/Nokia-9300.html">https://www.manualslib.com/download/756822/Nokia-9300.html</a>                                                                                                                                                                                                                                  |
| Ex-1041 | Jackson Phipps, The History of PPC and Google Ads, 2060 Digital, available at: <a href="https://2060digital.com/blog/the-history-of-ppc-and-google-ads/#:~:text=In%202000%2C%20Google%20rolled%20out,digital%20advertisers%20across%20the%20world">https://2060digital.com/blog/the-history-of-ppc-and-google-ads/#:~:text=In%202000%2C%20Google%20rolled%20out,digital%20advertisers%20across%20the%20world</a> |
| Ex-1042 | Cisco Systems, Shared Services: What, Why, and Where to Begin (2006), available at: <a href="https://www.cisco.com/web/strategy/docs/gov/SharedServices_Jan06.pdf">https://www.cisco.com/web/strategy/docs/gov/SharedServices_Jan06.pdf</a>                                                                                                                                                                      |
| Ex-1043 | PCT Publication WO2006/020938 (“Mumick’938)                                                                                                                                                                                                                                                                                                                                                                      |
| Ex-1044 | Provisional Application 60/898,678 (“Still Provisional”)                                                                                                                                                                                                                                                                                                                                                         |
| Ex-1045 | Ben Shneiderman & Catherine Plaisant, Designing the User Interface (4th ed., 2005)                                                                                                                                                                                                                                                                                                                               |
| Ex-1046 | <i>Multimodal Media LLC v. Guangdong Oppo Mobile Telecommunications Corp., Ltd.</i> , 2:21-cv-00436, D.I. 74 (E.D. Tex. Sept. 6, 2023) (Order of Dismissal)                                                                                                                                                                                                                                                      |

1. I, Dr. Benjamin B. Bederson, declare as follows.

**I. INTRODUCTION**

2. I have been retained by Google LLC, Samsung Electronics Co. Ltd., and Samsung Electronics America, Inc. (collectively, “Petitioner”) as an independent expert consultant in this *inter partes* review (“IPR”) proceeding before the United States Patent and Trademark Office (“PTO”).

3. I have been asked by Petitioner Counsel (“Counsel”) to consider whether certain references disclose, teach and/or suggest the features recited in Claims 1-2, 4-5, and 9 of U.S. Patent No. 7,929,949 (“the ’949 Patent”) (Ex-1001), which I understand is currently assigned to Patent Owner Multimodal Media LLC (“PO”).<sup>1</sup> My opinions and the bases for my opinions are set forth below.

4. I am being compensated at my ordinary and customary consulting rate for my work, which is \$600 per hour. My compensation is in no way contingent on the nature of my findings, the presentation of my findings in testimony, or the outcome of this or any other proceeding. I have no other direct financial interest in this proceeding.

---

<sup>1</sup> Where appropriate, I refer to exhibits that I understand are attached to the petition for IPR of the ’949 Patent.

## **II. BACKGROUND AND QUALIFICATIONS**

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

6. I am over 18 years of age and, if I am called upon to do so, I would be competent to testify as to the matters set forth in my Declaration. I understand that a copy of my current curriculum vitae, which details my education and professional and academic experience, is being submitted as Ex-1003. The following provides a brief overview of some of my experience that is relevant to the matters set forth in my Declaration.

7. I am currently Professor Emeritus of Computer Science at the University of Maryland (“UMD”). From 2014 to 2018, I was the Associate Provost of Learning Initiatives and Executive Director of the Teaching and Learning Transformation Center at the UMD. I am a member and previous director of the Human-Computer Interaction Lab (“HCIL”), the oldest and one of the best known Human-Computer Interaction (“HCI”) research groups in the country. I am co-founder of the J.S. Bryant School, a therapeutic high school planning to open in 2025. I was also co-founder and Chief Scientist of Zumobi, Inc. from 2006 to 2014, a Seattle-based startup that is a publisher of content applications and advertising

platforms for smartphones. I am also co-founder and co-director of the International Children's Digital Library ("ICDL"), a web site launched in 2002 that provides the world's largest collection of freely available online children's books from around the world at [www.childrenslibrary.org](http://www.childrenslibrary.org) with an interface aimed to make it easy for children and adults to search and read children's books online. I was also co-founder and prior Chief Technology Officer of Hazel Analytics, a data analytics company to improve food safety and better public health whose product sends alerts in warranted circumstances. In addition, I have for more than 15 years consulted for numerous companies in the area of user interfaces, including Microsoft, Logitech, the Palo Alto Research Center, Sony, Lockheed Martin, Hillcrest Labs, and NASA Goddard Space Flight Center.

8. The claims of the '949 Patent generally relate to a voice short message service messaging system. For more than 30 years, I have studied, designed, and worked in the field of computer science and HCI. My experience includes 30 years of teaching and research, with research interests in HCI and the software and technology underlying today's interactive computing systems. This includes the design and implementation of hardware and software systems including the use of interactive voice interfaces as well as many other kinds of sensors and interfaces for electronic devices on a range of devices, including embedded systems, controllers, smart phones and PDAs.

9. At UMD, I have been focused primarily on the area of HCI, a field that relates to the development and understanding of computing systems to serve users' needs. Researchers and practitioners in this field are focused on making universally usable, useful, efficient, and appealing systems to support people in their wide range of activities. My approach is to balance the development of innovative technology that serves people's practical needs. Example systems following this approach that I have built include Cortex-I (1992 embedded computer vision system that sensed licensed plates with custom motor, camera and controller), Audio Augmented Reality (1995 embedded system for sensing a user's location and playing audio suited to that location), Fisheye Menus (2000 software for sensing movement within and selection of linear list of items in a menu), PhotoMesa (2001 software for end users to browse personal photos), DateLens (2002 software for end users to use their mobile devices to efficiently access their calendar information), SlideBar (2005 linear sensor to control scrolling), LaunchTile (2005 "home screen" software for mobile devices to allow users to navigate apps in a zoomable environment), SpaceTree (2001 software for end users to efficiently browse very large hierarchies), ICDL (as I describe above), and StoryKit (a 2009 iPhone app for children to create stories).

10. I built a voice interface system in 2009, described in a 2010 paper<sup>2</sup>, to support user's rich text entry with multi-modal input on mobile devices to support communications including text messages. As illustrated in this figure from the paper, we enabled users to enter formatted text (bold, colored, etc.) using a touch screen, voice recognition, tilt, and a foot pedal and we measured which approach was most effective.

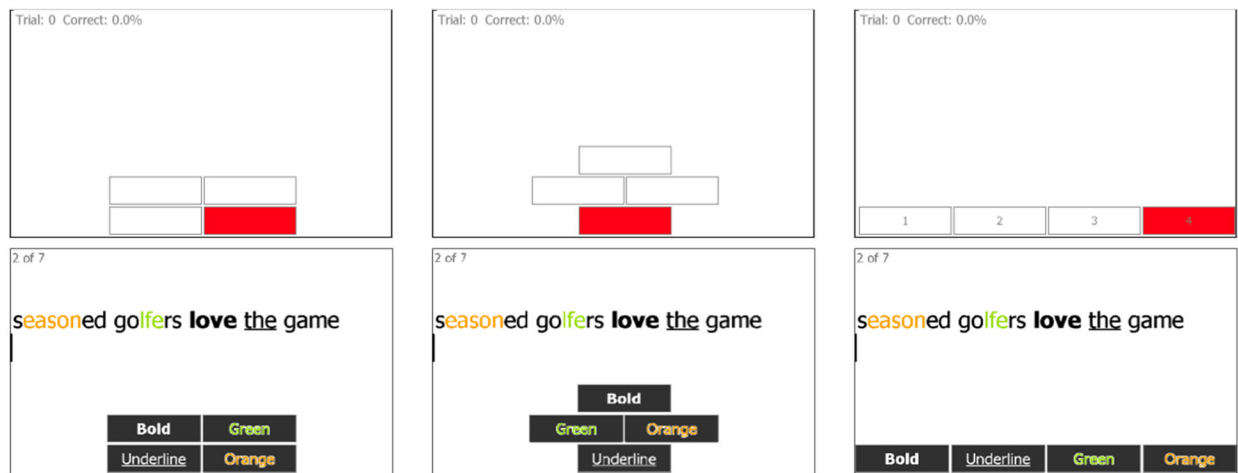


Figure 2. The software interface for the Target Selection (top) and Text Formatting (bottom) tasks. Presented are the Foot (left), Tilt (middle) and Touch/Voice (right) interfaces. The target to select for the Target Selection task is red. The phrase used in the Text Formatting task includes all four formats: 'eason' is orange; 'lfe' is green; 'love' is bold; and 'the' is underlined.

11. Throughout the 1990s and 2000s, I worked on a range of “zoomable user interfaces,” which are systems that support the multi-scale and spatial organization of and magnification-based navigation among multiple documents or visual objects. I built several different “ZUI” systems over the years, including

---

<sup>2</sup> David Dearman, Amy Karlson, Brian Meyers, and Ben Bederson, Multi-modal text entry and selection on a mobile device (2010), In Proceedings of Graphics Interface 2010 (GI '10), Canadian Information Processing Society, CAN, 19–26 (Ex-1031).

Pad++, Jazz and Piccolo. In those systems, I used a range of solutions to allow users to control zooming through the information space.<sup>3</sup>

12. My work with ZUIs led to my creation of Zumobi in 2006, where I was responsible for investigating new software platforms and developing new user interface designs that provide efficient and engaging interfaces to permit end users to access a wide range of content on mobile platforms (including the iPhone and Android-based devices). For example, I designed and implemented software called “Ziibii,” a “river” of news for iPhone that used a capacitive sensor for controlling linear movement through news, software called “ZoomCanvas,” a zoomable user interface for several iPhone apps, and iPhone apps including “Inside Xbox” for Microsoft and Snow Report for REI.

13. At the ICDL, I have since 2002 been the technical director responsible for the design and implementation of the web site, [www.childrenslibrary.org](http://www.childrenslibrary.org) (originally at [www.icdlbooks.org](http://www.icdlbooks.org)). In particular, I have been closely involved in designing the user interface as well as the software architecture for the web site since its inception in 2002. Beginning in the mid-1990s, I have been responsible for the design and implementation of numerous other web sites in addition to the ICDL. For

---

<sup>3</sup> Benjamin B. Bederson & James D. Hollan, Pad++: A Zooming Graphical Interface for Exploring Alternate Interface Physics, UIST ‘94 Proceedings of the 7th Annual ACM Symposium on User Interface Software and Technology 17 (1994), DOI: <http://dx.doi.org/10.1145/192426.192435> (Ex-1026).

example, I designed and built my own professional web site when I was an Assistant Professor of Computer Science at the University of New Mexico in 1995 and have continued to design, write the code for, and update both that site (which I moved to the UMD in 1998, currently at <http://www.cs.umd.edu/~bederson/>) as well as numerous project web sites, such as Pad++, <http://www.cs.umd.edu/hcil/pad++/>.

14. I received the Janet Fabri Memorial Award for Outstanding Doctoral Dissertation for my Ph.D. work in robotics and computer vision. My work has been published extensively in more than 160 technical publications, and I have given about 100 invited talks, including 9 keynote lectures. I have won a number of awards including the Brian Shackel Award for “outstanding contribution with international impact in the field of HCI” in 2007, and the Social Impact Award in 2010 from the Association for Computing Machinery’s (“ACM”) Special Interest Group on Computer Human Interaction (“SIGCHI”). ACM is the primary international professional community of computer scientists, and SIGCHI is the primary international professional HCI community. I have been honored by both professional organizations. I am an “ACM Distinguished Scientist,” which “recognizes those ACM members with at least 15 years of professional experience and 5 years of continuous Professional Membership who have achieved significant accomplishments or have made a significant impact on the computing field.” I am a member of the “CHI Academy,” which is described as follows: “The CHI Academy

is an honorary group of individuals who have made substantial contributions to the field of HCI. These are the principal leaders of the field, whose efforts have shaped the disciplines and/or industry, and led the research and/or innovation in human-computer interaction.” The criteria for election to the CHI Academy are: (1) cumulative contributions to the field; (2) impact on the field through development of new research directions and/or innovations; and (3) influence on the work of others. I have received two “Test of Time” awards from IEEE InfoVis for my 2001 and 2002 work on visualizing hierarchies, including those containing digital photos.<sup>4</sup>

15. I have appeared on radio shows numerous times to discuss issues relating to user interface design and people’s use and frustration with common technologies, web sites, and mobile devices. My work has been discussed and I have been quoted by mainstream media around the world over 120 times, including by the New York Times, the Wall Street Journal, the Washington Post, Newsweek, the Seattle Post Intelligencer, the Independent, Le Monde, NPR’s All Things Considered, New Scientist Magazine, and MIT’s Technology Review.

16. I have designed, programmed, and publicly deployed dozens of user-facing software products that have cumulatively had millions of users. My work is cited by several major companies, including Amazon, Apple, Facebook, Google, and

---

<sup>4</sup> <https://ieevis.org/year/2021/info/awards/test-of-time-awards;>  
[https://ieevis.org/year/2022/info/awards/test-of-time-awards.](https://ieevis.org/year/2022/info/awards/test-of-time-awards)

Microsoft. I am a named inventor on 14 U.S. patents and 20 U.S. patent applications.

The patents are generally directed to user interfaces/experience.

17. I received a B.S. degree in Computer Science with a minor in Electrical Engineering in 1986 from the Rensselaer Polytechnic Institute. I received M.S. and Ph.D. degrees in Computer Science in 1989 and 1992, both from New York University.

### **III. INFORMATION CONSIDERED**

18. In preparation for my Declaration, I have considered the materials I discuss in my Declaration, including, for example, the '949 Patent, the references cited by the '949 Patent, the prosecution history of the '949 Patent (including the references cited therein), various background articles and materials referenced in my Declaration, and the prior art references I identify in my Declaration. In addition, my opinions are further based on my education, training, experience, and knowledge in the relevant field.

### **IV. RELEVANT LEGAL STANDARDS**

19. I am not an attorney and offer no legal opinions. For the purposes of my Declaration, I have been informed about certain aspects of the law that are relevant to my analysis, as summarized below.

#### **A. Claim Interpretation**

20. I have been informed and understand that in an IPR proceeding, claims are to be interpreted according to the *Phillips* claim construction standard. I

understand that under this standard, the meaning of claim terms is considered from the viewpoint of a hypothetical “person of ordinary skill in the art” (“POSITA”) at the time of the alleged invention. I have been informed and understand that claim construction is a matter of law and that the final claim constructions for this proceeding will be determined by the Patent Trial and Appeal Board (“PTAB”).

21. I provide my opinions regarding terms that may require explicit construction to resolve the grounds I present in my Declaration in Section IX, ¶¶52-59.

**B. Perspective of One of Ordinary Skill in the Art**

22. I have been informed and understand that a patent is to be understood from the perspective of a hypothetical POSITA. Such an individual is considered to possess normal skills and knowledge in a particular technical field (as opposed to being a genius). I understand that in considering what the claims of a patent require, what was known prior to that patent, what a prior art reference discloses, and whether an invention is obvious or not, one must use the perspective of such a POSITA.

**C. Obviousness**

23. I have been informed and understand that a patent claim is obvious under 35 U.S.C. §103, and therefore invalid, if the claimed subject matter, as a whole, would have been obvious to a POSITA as of the priority date of the patent based on one or more prior art references and/or the knowledge of a POSITA.

24. I understand that an obviousness analysis must consider (1) the scope and content of the prior art, (2) the differences between the claims and the prior art, (3) the level of ordinary skill in the pertinent art, and (4) secondary considerations, if any, of non-obviousness (such as unexpected results, commercial success, long-felt but unmet need, failure of others, copying by others, and skepticism of experts).

25. I understand that a prior art reference may be combined with other references to disclose each element of the invention under 35 U.S.C. §103. I understand that a reference may also be combined with the knowledge of a POSITA, and that this knowledge may be used to combine multiple references. I further understand that a POSITA is presumed to know the relevant prior art. I understand that the obviousness analysis may take into account the inferences and creative steps that a POSITA would employ.

26. In determining whether a prior art reference would have been combined with other prior art or other information known to a POSITA, I understand that the following principles may be considered:

- a. whether the references to be combined involve non-analogous art;
- b. whether the references to be combined are in different fields of endeavor than the alleged invention in the Patent;
- c. whether the references to be combined are reasonably pertinent to the problems to which the inventions of the Patent are directed;

- d. whether the combination is of familiar elements according to known methods that yields predictable results;
- e. whether a combination involves the substitution of one known element for another that yields predictable results;
- f. whether the combination involves the use of a known technique to improve similar items or methods in the same way that yields predictable results;
- g. whether the combination involves the application of a known technique to a prior art reference that is ready for improvement, to yield predictable results;
- h. whether the combination is “obvious to try”;
- i. whether the combination involves the known work in one field of endeavor prompting variations of it for use in either the same field or a different one based on design incentives or other market forces, where the variations are predictable to a POSITA;
- j. whether there is some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill in the art to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention;
- k. whether the combination requires modifications that render the prior

art unsatisfactory for its intended use;

- l. whether the combination requires modifications that change the principle of operation of the reference;
- m. whether the combination is reasonably expected to be a success; and
- n. whether the combination possesses the requisite degree of predictability at the time the invention was made.

27. I understand that in determining whether a combination of prior art references renders a claim obvious, it is helpful to consider whether there is some teaching, suggestion, or motivation to combine the references and a reasonable expectation of success in doing so. I understand, however, that a teaching, suggestion, or motivation to combine is not required.

#### **V. LEVEL OF ORDINARY SKILL IN THE ART**

28. I am familiar with the level of ordinary skill in the art with respect to the '949 Patent around its filing date. Based on my experience working, teaching, and conducting research in the relevant field, and based on my review of the '949 Patent specification, claims, file history, and prior art, I believe one of ordinary skill in the art around the time of the alleged invention of the '949 Patent would have been someone with at least a bachelor's degree in electrical engineering, computer science, computer engineering, or a related field, and two-three years of experience with multimedia and Internet-related communications technologies, or the

equivalent, with additional education substituting for experience and vice versa.

29. In determining the level of ordinary skill in the art, I considered, for example, the type of problems encountered in the art, prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field.

30. I met or exceeded the knowledge and experience that a POSITA would have had in 2009. In my work as a professor and entrepreneur, I worked with graduate students and others who had the knowledge and experience of a POSITA in 2009, and I am able to render opinions from the perspective of a POSITA based on that knowledge and experience. My opinions concerning the '949 Patent claims and the prior art are from the perspective of a POSITA, as set forth above.

## **VI. SUMMARY OF MY OPINIONS**

31. As I explain below in detail in my Declaration, it is my opinion that Claims 1-2, 4-5, and 9 of the '949 Patent would have been obvious under 35 U.S.C. §103 on the following grounds:

- **Grounds 1-2:** Claims 1-2, 4-5, and 9 are obvious over Still (Ex-1008) alone or Still in view of Levkovitz (Ex-1009).
- **Ground 3-4:** Claims 1-2, 4-5, and 9 are obvious over Mumick'046 (Ex-1010) alone or Mumick'046 in view of Levkovitz.

## **VII. TECHNOLOGICAL BACKGROUND**

32. By February 3, 2009, a POSITA would have been abundantly familiar with a wide range of technologies, including numerous techniques for addressing recipients, for structuring hardware and software through clients and servers including deciding how to design such client-server systems so that different functionalities would be located at the client or server, and for including more user-friendly and automated functionality to the user to support various communication techniques such as SMS messaging on the user's mobile device. To provide context for the element-by-element analysis of the claims to follow, I present an overview of some of the relevant state of the art existing as of the time of the alleged invention.

### **A. Recipient Addressing Techniques**

33. The earliest of computing systems supported electronic communications through various techniques including email and chat, then later (but still before the time the '949 Patent) social networks. All of these supported various techniques to decide who to address the communications to. It never made sense to ask a human user to remember the address of all possible recipients, and so it is no surprise that various recipient addressing techniques were developed early on. For example, I remember using email clients such as "Pine" back in the 1990s that had a built-in address book where I could enter the names and email address of recipients, and then use them to easily select who to send emails to. And by 1999, as shown in

the screenshot below<sup>5</sup>, commercial services, such as AOL Instant Messenger (AIM) provided “buddy lists”, which were a form of an address book of online friends to direct short messages to.



Register and start using AOL Instant Messenger (SM) today!



- **FREE!**
- **Fast Sign Up**
- **Stay on Top of the News**
- **Watch Your Stocks**

New Users Click Here

Upgrade

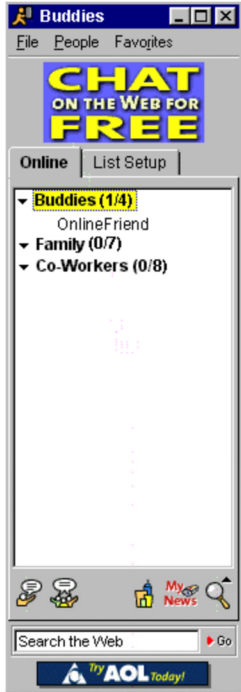
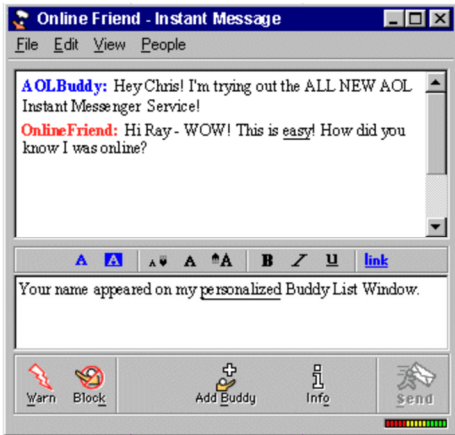
Click here for the latest version of the software.

---

Sign up now and start using AOL Instant Messenger! Just click above to get your screen name, then download the latest version. It's that easy.

- Send private instant messages in real time
- Chat with multiple people
- New FTP allows you to send and receive files
- Keep track of online friends with your Buddy List (tm)

**Now you can chat instantly with the people you want--It's hassle-free no matter how you are connected to the Internet!**



New Users Click Here

Upgrade



Register and start using AOL Instant Messenger (SM) today!

Copyright © 1999 America Online, Inc.  
All rights reserved. [Legal Notices](#)

<sup>5</sup> AOL Instant Messenger Registration page (1999), available at: <https://web.archive.org/web/19991127133324/http://aim.aol.com/?promo=106712&pageset=Aim> (Ex-1032).

34. Similarly, cell phones commonly had contact lists or address books built in that were available for users to select recipients from in order to send short text messages. For example, as shown in a user guide<sup>6</sup> (Ex-1030, 34) from the Nokia 3250 mobile phone from 2005, it let users select recipients or groups from the built-in “Contacts” program in order to send short text messages.

#### M e s s a g i n g

### ■ Write and send messages

The wireless network may limit the size of MMS messages. If the inserted picture exceeds this limit, the device may make it smaller so that it can be sent by MMS.

Your device supports the sending of text messages beyond the character limit for a single message. Longer messages are sent as a series of two or more messages. Your service provider may charge accordingly. Characters that use accents or other marks, and characters from some language options like Chinese, take up more space limiting the number of characters that can be sent in a single message.

Before you can send and receive an SMS message, a multimedia message, or an e-mail, or connect to your remote mailbox, you must have the correct connection settings in place. See “Messaging settings,” p. 41.

1. To create a message, select **Menu** > **Messag.** > **New message** and from the following options:
  - Text message** — to create a text message
  - Multimedia message** — to create a multimedia message (MMS)
  - E-mail** — to create an e-mail message. If you have not set up your e-mail account, you are asked if you want to do so.
2. Press the joystick to select the recipients or groups from **Contacts** or enter the phone number or e-mail address of the recipient in the **To** field. To add a semicolon (;) to separate each recipient, press \*.

---

<sup>6</sup> Nokia 3250 User Guide (2006), available at:  
<https://ia801806.us.archive.org/32/items/manualzilla-id-5923903/5923903.pdf> (Ex-1030)

35. Many of these systems supported sending a message to a group of people simultaneously including at least email and text messaging. For example, documentation for the Pine email system I used in the 1990s had information about sending messages to multiple recipients.<sup>7</sup> Similarly, it was also common practice to be able to send text messages to multiple recipients. For example, the user manual for the Nokia 9300 mobile phone available in 2005<sup>8</sup> explained this (Ex-1040, 31):

**M e s s a g i n g**

Press *Write message*, select *Text message*, and press *OK*.

To write a new text message, press *Recipient* to select the recipients of the message, or enter the recipients' GSM phone numbers in the *To:* field. If you enter more than one number, separate the numbers with a semicolon or by pressing the Enter key after each number. Write the message, and press *Send*. You can see the number of characters that are left in the character counter. Note that a text message can only contain unformatted text.

**B. Click-Through Techniques**

36. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

---

<sup>7</sup> The Wayback Machine Archive, Pine Information Center, Frequently Asked Questions, University of Washington (Oct. 4, 2000), available at: <https://web.archive.org/web/20010410095757/http://www.washington.edu/pine/faq/sendreceive.html> (Ex-1039).

<sup>8</sup> Nokia 9300 User Guide (2005), available at: <https://www.manualslib.com/download/756822/Nokia-9300.html> (Ex-1040).

37. For example, text messages could include linked information that would allow clicking through to the linked information<sup>9</sup> by automatic dialing of a phone number using standard DTMF tones.<sup>10</sup> Mumick-046 explains that links “when activated (e.g. by clicking on the phone number) allows the receiving user to call the multimodal platform in order to retrieve the voice message.” Ex-1010 ¶37. Mumick-046 further explains that the link can be activated by using “normal outcalling”, that is standard DTMF tones. Ex-1010 ¶61.

38. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model.<sup>11</sup>

---

<sup>9</sup> PCT Publication WO2006/020938 (Ex-1043) at ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”).

<sup>10</sup> Ex-1030 (Nokia 3250 User Guide) at 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF.

<sup>11</sup> Jackson Phipps, The History of PPC and Google Ads, 2060 Digital, available at: <https://2060digital.com/blog/the-history-of-ppc-and-google-ads/#:~:text=In%202000%2C%20Google%20rolled%20out,digital%20advertisers%20across%20the%20world> (Ex-1041).

**C. Client-Server Structures**

39. Computer systems have been architected for decades with a wide range of structures. Historically, computers were big and expensive and they provided “time shared” access to multiple terminals. Sometimes those terminals (a.k.a. “clients”) were “dumb” or “thin”, and provided primarily input and output capabilities while most of the computation was provided at the “server”. Other times, those clients had greater computation capability, and in the early 1980s with the introduction of “personal computers”, those clients (while still often connected to servers) had sufficient computational capabilities to run independently.

40. Back in 1992, client-server computing was significant enough that it was described in an article<sup>12</sup> in Communications of the ACM – the broad interest magazine of the main professional international computer society. That article characterized some of the key elements of client-server computing, including that the client typically communicates with the server, transmitting queries or commands, performs data analysis on query or command results from the server and presents the Graphical User Interface (GUI). On the other side, servers typically provide a service to the client, responding to the queries or commands – and do so in a way that hides much of the details of its implementation so that clients with various kinds

---

<sup>12</sup> Alok Sinha, Client-server computing (1992), Communications of the ACM, 35, 7 (July 1992), 77–98, DOI: <https://doi.org/10.1145/129902.129908> (Ex-1025).

of software and hardware can work with it. This article also explains that as far back as 1992, it was common to have the GUI of an application displayed on a computer remote from the application. It describes the X Window System that commonly ran on Unix environments which “provides network transparency so that an application displaying a chart on a screen could be running on a local machine or a remote machine thousands of miles away.” Ex-1025, 91.

41. One particularly important set of clients and servers communicate over the Internet in what has come to be called the World Wide Web (WWW). Tim Berners-Lee initially developed the WWW in 1990. While Internet-based communications had been around for some time at that point, the WWW simplified things by combining a few basic technologies including web servers, web browsers, HTTP, and HTML. The Internet was an enabling technology – allowing computers to communicate arbitrary information between any location in the world.<sup>13</sup>

42. Another extremely common server functionality was to provide database services. Typically called database servers or database management systems (DBMSs), these servers provide services to enable client devices and applications to safely and efficiently access, store, and query data on those servers.

---

<sup>13</sup> Tim Berners-Lee, Robert Cailliau, Ari Luotonen, Henrik Frystyk Nielsen, and Arthur Secret, *The World-Wide Web* (1994), *Communications of the ACM* 37, 8 (August 1994), 76-82, DOI: <http://dx.doi.org/10.1145/179606.179671> (Ex-1027).

A 2000 database textbook<sup>14</sup>, already in its 7<sup>th</sup> edition at that time, described DBMSs in this way (emphasis in original):

Between the physical database itself — i.e., the data as physically stored — and the users of the system is a layer of software, known variously as the **database manager** or **database server** or, more commonly, the **database management system** (DBMS). All requests for access to the database are handled by the DBMS; the facilities sketched in Section 1.1 for adding and removing files (or tables), retrieving data from and updating data in such files or tables, and so forth, are all facilities provided by the DBMS. One general function provided by the DBMS is thus the *shielding of database users from hardware-level details* (much as programming-language systems shield application programmers from hardware level details). In other words, the DBMS provides users with a perception of the database that is elevated somewhat above the hardware level, and it supports user operations (such as . . . SQL operations . . .) that are expressed in terms of that higher-level perception.

43. While there were (and are) good reasons to have servers architected to provide services such as those for the web and databases, a POSITA would have known that there are actually many different ways to structure such services. On one hand, those services could be distributed across different servers, or on the other hand, those services could be put on a client computer. Such decisions were well understood by a POSITA, and would be made based on the details of a particular situation considering factors such as expense, expected scale of use, required reliability, speed and availability of communication networks, etc.

---

<sup>14</sup> C.J. Date, *An Introduction to Database Systems* at 8 (7th ed. 2000) (Ex-1029).

44. For example, the same 2000 database textbook explained many possible database server configurations in Section 2.12 on Distributed Processing (Ex-1029, 50-54). “Many levels or varieties of distributed processing are possible.” (Ex-1029, 51). Or alternatively, “... a single client machine might be able to access several different server machines ...” (Ex-1029, 53).

45. Such database systems are agnostic as to what kind of data is stored in the database. This is indicated in that same 2000 database textbook in that the student questions from the first chapter include storing content as varied as bottles of wine as well as audio in a database (Ex-1029, 29-30).

46. Another example of services provided by servers was voicemail. It was common by 2007 to have mobile phone voicemail stored on a server. I remember before 2007 calling a special voicemail number (often by pressing a special key on the mobile phone) to retrieve the voicemail – which worked because the voicemail was stored on the server. Apple built on this server based voicemail by providing an access method they called Visual Voicemail in their January 9, 2007 iPhone announcement<sup>15</sup>. Visual Voicemail worked by downloading the voicemail from the server to the phone and then provided access to each message in a list so they could be listened to in any order. “iPhone’s pioneering Visual Voicemail, an industry first,

---

<sup>15</sup> Newsroom, Apple Reinvents the Phone with iPhone (Jan. 9, 2007), available at: <https://www.apple.com/newsroom/2007/01/09Apple-Reinvents-the-Phone-with-iPhone/> (Ex-1033).

lets users look at a listing of their voicemails, decide which messages to listen to, then go directly to those messages without listening to the prior messages. Just like email, iPhone's Visual Voicemail enables users to immediately randomly access those messages that interest them most.” *Id.*

## VIII. THE ‘949 PATENT AND ITS FILE HISTORY

47. The ‘949 Patent generally relates to a method for enabling recipient interaction by triggering “an interactive multimodal message” on the recipient’s mobile device. Ex-1001, 1:20-22. The patent enables a recipient to interact with a multimodal message by accessing a pointer (i.e., a link) in a notification message sent to their mobile device. Figure 1 illustrates the exemplary method of the invention:

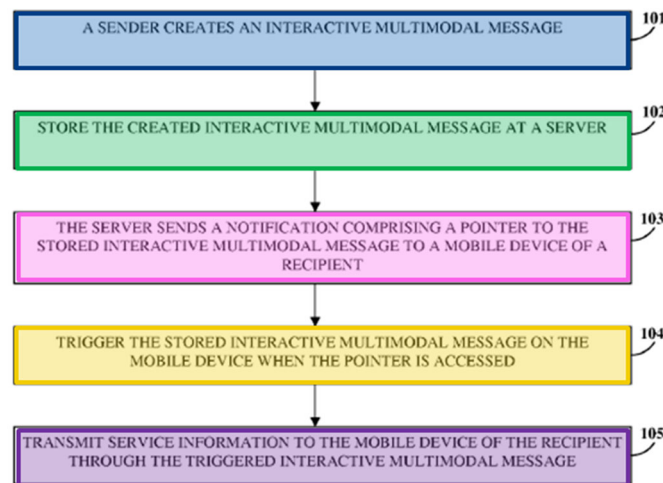


FIG. 1

48. As the figure illustrates, a sender creates an interactive multimodal message—for example, a message containing a combination of text, voice, and other modalities such as image or video—using a client application available to the sender (101, blue). Ex-1001, 3:15-17, 3:50-52. The '949 Patent states that the client application “may be provided as a functionality in a compose function available” in a voice SMS application “provided over a voice connection” or may “be made available over a voice call or via a web interface.” Ex-1001, 3:56-59, 4:4-6. The interactive multimodal message is stored at a server (102, green), which “may be a remote server.” Ex-1001, 4:9-11. Next, the server sends a notification to the recipient’s mobile device, which may be in the form of a USSD prompt, text message, voice message, or voice call (103, pink). Ex-1001, 4:11-15. The notification includes “a pointer to the stored” message.” Ex-1001, 4:15-16. The “stored interactive multimodal message is triggered” on the recipient’s mobile device when the recipient “accesses the pointer in the notification” (104, yellow) through their mobile device. Ex-1001, 4:22-25. The triggering event may occur, e.g., when the recipient “activates a link in a text message” on their device. Ex-1001, 4:25-30. “Service information is transmitted” to the recipient’s mobile device (105, purple) “through the triggered interactive multimodal message.” Ex-1001, 4:36-38. The '949 Patent states that transmitted service information may comprise “advertisements, alerts, or service content previews by the sender 201.” Ex-1001,

4:38-40. Finally, the recipient “interacts with the triggered multimodal message,” (not shown in Figure 1) by, e.g., “replying to the interactive multimodal message” or forwarding it “to one or more second recipients.” Ex-1001, 5:33-39.

49. The '949 Patent was filed on February 3, 2009. The examiner did not issue any prior art rejections during prosecution. Ex-1004. On January 6, 2011, the examiner allowed all pending claims. Ex-1004, 121-124.

50. For the reasons I discuss below, the prior art teaches the claimed method for enabling recipient interaction with an interactive multimodal message—including its well-known configuration of a client application and a server performing their routine functions—and renders the challenged claims unpatentable. Accordingly, it is my opinion that Claims 1-2, 4-5, and 9 of the '949 Patent are invalid as obvious over the prior art.

51. I understand from Counsel that all of the prior art references I discuss in my Declaration are prior art.

## **IX. CLAIM CONSTRUCTION**

52. For the purposes of my Declaration, I do not believe that any term requires explicit construction to resolve the issues I present in my Declaration, except for the terms below. Terms not expressly construed should be given their plain and ordinary meaning. Moreover, I understand from Counsel that various terms were construed or agreed upon by the parties (Multimodal and Guangdong OPPO

Mobile Telecommunications Corp.) in the *Oppo* district court litigation where Patent Owner asserted the '949 Patent against an unrelated party.<sup>16</sup> I apply those constructions in my analysis, except where I note below.

**A. “multimodal message” and “interactive multimodal message” (Claims 1-2, 4, 9)**

53. I understand from Counsel that in the *Oppo* district court litigation the claim term “multimodal message” was construed by the district court to mean “seamless combination of graphics, text, and audio output or a combination of the above modalities with speech, text, and touch input or vice versa”; and the term “interactive multimodal message” was construed to mean “Plain meaning (apart from the Court’s construction of ‘multimodal message,’ above).” Ex-1021, 8-14. I apply these constructions for purposes of my Declaration.

**B. “service information” (Claims 1, 5)**

54. I understand from Counsel that this claim term was construed by the district court in the *Oppo* litigation—pursuant to an agreement by the parties—to mean “service-related content information.” Ex-1021, 14. I disagree that this construction adds anything beyond the language of the claim itself.

55. Nonetheless, I apply this construction for purposes of my Declaration.

---

<sup>16</sup> I understand from Counsel that the *Oppo* litigation was settled (Ex-1046).

**C. “client application” (Claim 1)**

56. I understand from Counsel that the parties in the *Oppo* litigation agreed that this claim term should be construed to mean “a program present on the sender’s mobile device.” Ex-1021, 15, 48. I disagree that this construction is consistent with a POSITA’s understanding of the plain meaning of the claim element. A POSITA would have understood that the plain meaning of the full claim term “a client application available to said sender” is “a program present on or accessible by the sender’s mobile device.”

57. I understand from Counsel that, in the *Oppo* litigation, the parties agreed to construe the term “client application” in both the ’949 Patent and (unrelated) ’978 Patent to have the same meaning above. But the full “client application” claim term at issue in the ’978 Patent recites “a client application ***on a mobile device.***” Ex-1021, 18.<sup>17</sup> Here, the full claim term recites “a client application ***available to*** said sender.” Ex-1001, Cl. 1. The different language in the ’978 and ’949 Patents’ versions of the client application limitations is important because it suggests to a POSITA that the “client application” here should be construed more broadly. Specifically, a POSITA would have understood that the client application in the context of the ’949 Patent may be “available” to a sender without requiring that the application be resident on the sender’s device. For example, it may be

---

<sup>17</sup> Emphases have been added in my declaration, unless I note otherwise.

available to the sender by accessing the application on a server over a network connection. This is also what the '949 Patent specification describes.

58. The specification states that “[t]he client application may be available to the sender, *for example*, on a mobile device of the sender, *over a voice call, or via a web interface*.” Ex-1001, 2:10-12; *see also id.*, 3:54-59 (“The client application 202 may be provided as a functionality in a compose function available in a voice ... SMS[] application provided over a *voice connection*.”). The patent thus explicitly contemplates that the application can be accessible to the sender’s mobile device via a web interface, for example, on a server over a network connection and is not limited to being physically implemented on the sender’s mobile device. A POSITA would therefore have understood the term in its full context, “*a client application available to said sender*” to mean “*a program present on or accessible by the sender’s mobile device*.” This construction is consistent with the claims and specification and affords the claim its scope that a POSITA would have understood rather than improperly limiting it to one example in the specification (i.e., “on a mobile device”) while excluding others (i.e., “over a voice call, or via a web interface” or through a “voice connection”). I apply this construction for purposes of my Declaration. Regardless, I explain in my Declaration that the prior art invalidates the challenged claims under both this construction and the prior agreed-to construction from the *Oppo* litigation.

**D. “pointer” (Claim 1)**

59. I understand from Counsel that the parties in the *Oppo* litigation agreed that this claim term should be construed to mean “a link that directs to the interactive multimodal message.” Ex-1021, 47. I apply this construction for purposes of my Declaration.

**X. OVERVIEW OF THE APPLIED PRIOR ART REFERENCES**

**A. Still (Ex-1008)**

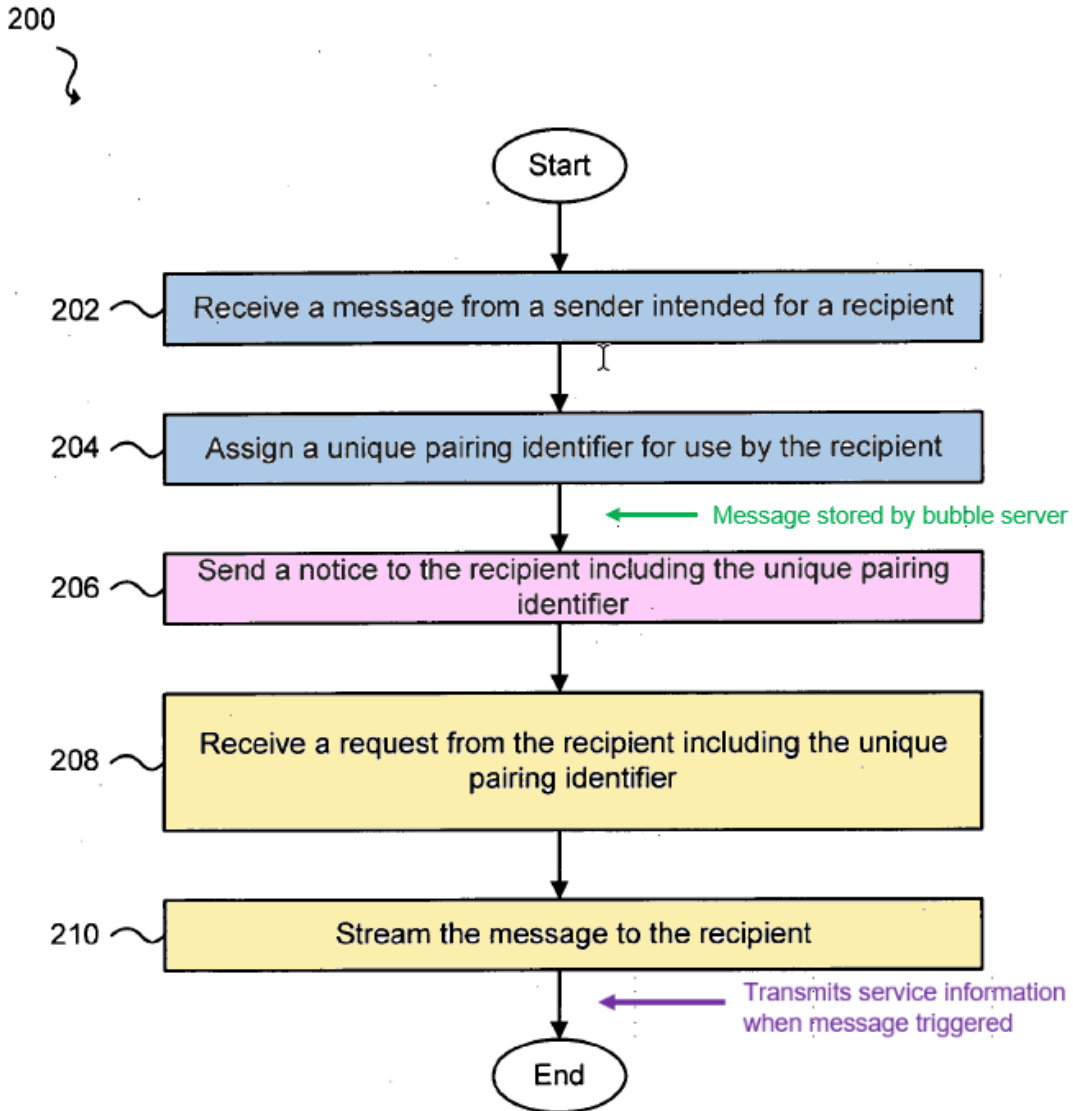
60. Still, titled “Systems and Methods for Distributing Messages to Mobile Devices,” was filed on January 30, 2008 and published as US2008/0182603 on July 31, 2008. Ex-1008, Cover. I understand from Counsel that Still is §§102(a) and (e) prior art.

61. Still discloses a method for delivering multimedia content and/or messages using a short message service (“SMS”) or short voice message service (“SVMS”) telecommunication network. Ex-1008, Abstract, ¶5. Still discloses that a “sender may use the mobile device 110 (FIG. 1) to send the message” to an intended recipient. *Id.* ¶27. As shown in Figure 2, a bubble<sup>18</sup> server receives the message from a sender for an intended recipient (blue, 202) and assigns “a unique pairing identifier for use by the recipient” (blue, 204). *Id.* ¶¶27-28. “The message may be stored on

---

<sup>18</sup> I understand from Counsel that, when it issued, Still was assigned to a company called Bubble Motion PTE Ltd. Still’s reference to a “bubble” server thus appears to mean nothing more than identification of the company that manufactured the server or developed the alleged inventions that are disclosed by the Still patent.

bubble server 102” (green). Ex-1008 ¶31. The bubble server then transmits a notice to the recipient, which includes the unique pairing identifier (pink, 206). *Id.* ¶29. The bubble server “may be a computing device” that stores and processes instructions and data, and communicates with communication network 104, content 106, telecommunication network 108, and mobile devices 110. Ex-1008 ¶19. The recipient may request the message by sending a message request to the server using their mobile device “to click, tap, and/or otherwise enter “the unique pairing identifier.” *Id.* ¶30.



62. The server receives a request including the unique pairing identifier from the recipient (yellow, 208) and streams the message to the recipient (yellow, 210). Ex-1008 ¶¶30-31. Still further discloses that “[a] multimedia content ... may be associated with the message” and “streamed to the recipient each time” they request the message. Ex-1008 ¶45. The multimedia content may include “music, electronic books, and other forms of audio entertainment content, as well as video

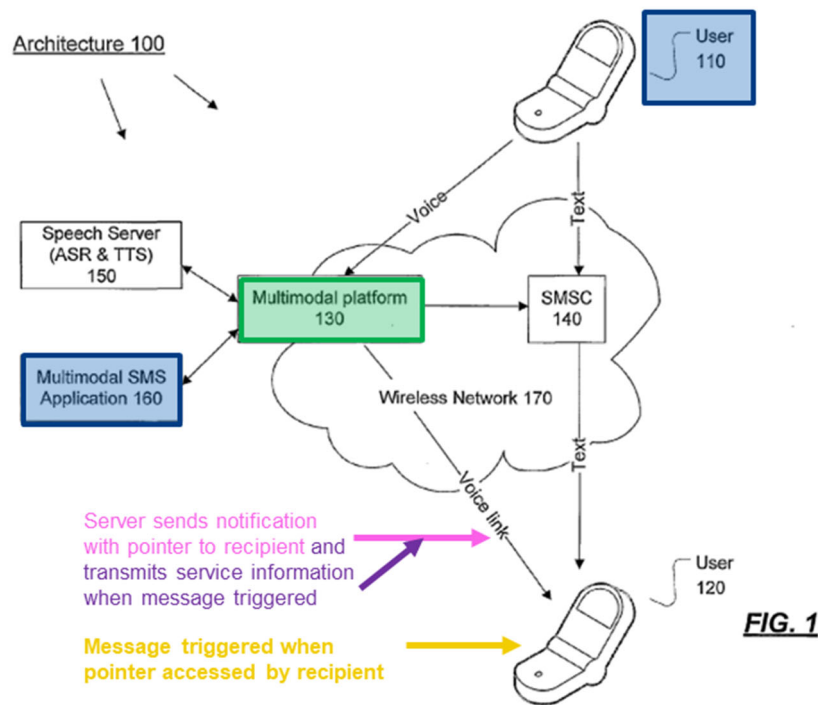
content, voice messages, animation content, or other forms of content for communication, advertising, entertainment, etc.” (purple). *Id.* The user may also interact with the message, such as by forwarding it “to a friend” or calling in to listen to or view the content by “pulling” it to their mobile device. Ex-1008 ¶26.

**B. Mumick’046 (Ex-1010)**

63. Mumick’046, titled “Methods for Identifying Messages and Communicating with Users of a Multimodal Message Service,” was published as US2008/0004046 on January 3, 2008. Ex-1010, Cover. I understand from Counsel that Mumick’046 is §102(b) prior art.

64. Mumick’046 discloses methods of combining speech with text “to create a multimodal SMS service,” wherein a user is provided a link within each message that allows the user to retrieve or add “a voice message associated with an SMS text message.” Ex-1010, Abstract. Referring to Figure 1, Mumick’046 explains that the user’s “text input device is used to compose a message to be sent using standard SMS technology.” *Id.* ¶27. The user “creates a voice message by directly calling the multimodal platform” or “replying to a previous multimodal SMS or text SMS[]” and following prompts “to create a voice recording.” Ex-1010 ¶24. After the user’s voice “recording is completed and stored” at multimodal platform 130 (green), a text message is transmitted to the recipient, “notifying them that a voice message has been recorded and providing a link,” (pink) “which can be activated to

listen to the message” (yellow). Ex-1010 ¶24. In particular, multimodal SMS application 160 (blue) “combines the text message... with a link to a spoken message” utilizing “a message identifier.” Ex-1010 ¶27. The “combined message” is transmitted to the recipient who may then “read the text message” and obtain the associated voice message from multimodal SMS application 160, “through the message identifier.” Ex-1010 ¶27. The speech server 150 can be utilized “for easy control of the playback and recording of voice messages as well as the control of other useful messaging function.” *Id.*



65. The SMS message “may also contain additional content provided by the sender” such as, e.g., “information helpful in identifying the message (e.g. the first few words of the original text message)” (purple). Ex-1010 ¶¶24, 63.

Moreover, Mumick'046's system "provides the ability" for a recipient "to reply to a voice mail by SMS." Ex-1010 ¶55. For example, while listening to a voicemail, the system may "allow the user to send a reply multimodal SMS message" by presenting a menu to the user, which allows "the user to record a message." Ex-1010 ¶55. The recorded message is sent to the original user that sent a voicemail, "as a multimodal SMS message." Ex-1010 ¶55.

**C. Levkovitz (Ex-1009)**

66. Levkovitz, titled "Device, System and Method of Presentation of Advertisements on a Wireless Device," was published as US2007/0088852 on April 19, 2007. Ex-1009, Cover. I understand from Counsel that Levkovitz is §102(b) prior art.

67. Levkovitz discloses sending and receiving SMS/Multimedia Messaging Service ("MMS") messages "having embedded therein a content item served by [an] ad server." Ex-1009 ¶170. Levkovitz discloses with Figure 7 that "sender device 701 may include a message client 731" (blue), which incorporates, e.g., a software and/or hardware component that is "able to send and/or receive a message, a textual message, a graphical message, a SMS message, a MMS message, an IM item," an Email message, "or the like." Ex-1009 ¶240. For example, Levkovitz discloses that message client 731 can be employed "as a SMS/MMS/IM/Email application" that is "able to send messages, receive messages,

compose or edit outgoing messages intended for transmission, present or view or playback incoming message[s], delete previous messages, or the like.” *Id.* Messaging client 731 may also retrieve “content items or advertisements” using an ad server (purple). *Id.* The sender “may create, e.g., using sender device 701, a message,” which may include “a textual message, a graphical message, a SMS message, a MMS message, an [IM] item, an [Email] message, or the like.” *Id.* ¶233. The message may be sent from the sender to the recipient “through a wireless communication server/gateway” (green). *Id.*

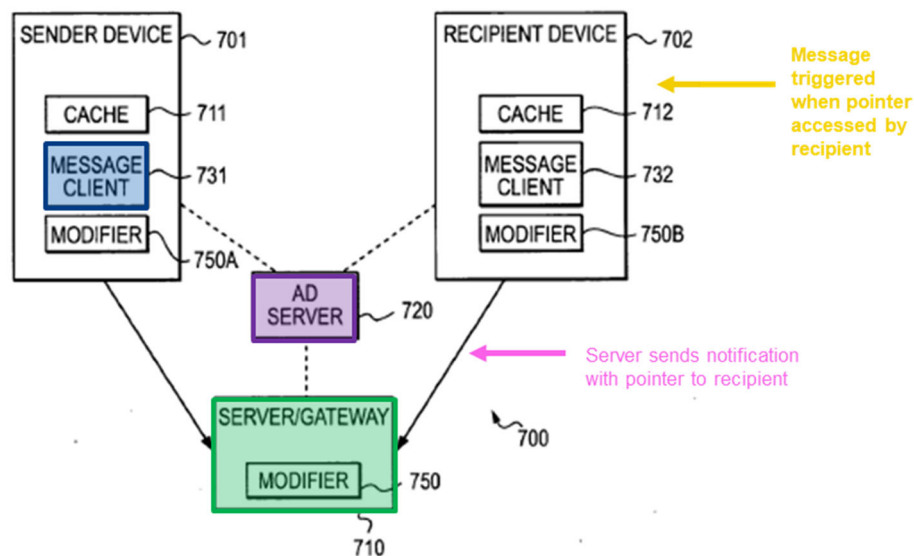


FIG. 7

68. Levkovitz further discloses that certain system components “may remotely, directly or indirectly trigger” the recipient’s device “to transmit a content request” by sending a message “having a link or a shortcut which may trigger a content request by” the recipient’s device (yellow). Ex-1009 ¶175. For example, a

recipient “may receive an indication that an incoming” content item is received, in which case, the recipient can “press or click” on a soft-key and be provided user-selectable operations that are associated with the message or the “content item embedded therein” (e.g., advertisement) via an input unit (pink). Ex-1009 ¶269 (operations may include, for example, “forward the content item and/or the incoming message and/or a portion thereof ... to another recipient”).

## **XI. DETAILED EXPLANATION OF THE UNPATENTABILITY GROUNDS**

### **A. Grounds 1-2: Claims 1-2, 4-5, and 9 are rendered obvious by Still alone or Still in view of Levkovitz**

#### **1. A POSITA would have been motivated to combine Still and Levkovitz and had a reasonable expectation of success**

69. In addition to the reasons set forth below, a POSITA would have been motivated to combine the teachings of Still and Levkovitz (“Still-Levkovitz”) and would have had a reasonable expectation of success in doing so because each relates to the same well-known technologies.

70. Both relate to and describe methods for delivery of multimedia content using SMS messages that include a notification sent to a recipient that includes a pointer, which in turn links to the multimodal message stored on a server. Ex-1008, Abstract, ¶¶7-8; Ex-1009 ¶¶170, 175. Still discloses a method for receiving, using a server, a message from a sender for an intended recipient; “assigning a unique pairing identifier for use by the recipient”; transmitting a notice, which includes the

unique pairing identifier, to the recipient; “receiving a request from the ... unique pairing identifier” by the recipient “click[ing], tap[ping], and/or otherwise enter[ing] the unique pairing identifier”; and using the server to “stream[] the message to the recipient” each time he requests the message. Ex-1008 ¶¶7, 30, 45. Still’s pointer or link is called “a unique pairing identifier” for the message recipient to use to retrieve the message from the server, which then “stream[s] the message to the recipient.” Ex-1008 ¶¶7. Still’s recipient may interact with the message by forwarding the message to another recipient. Ex-1008 ¶26. Similarly, Levkovitz discloses methods for sending and receiving SMS/MMS messages using a message client on the sender’s device, Ex-1009 ¶240, wherein the messages have “embedded therein a content item” such as an advertisement. Ex-1009 ¶170. Moreover, Levkovitz discloses that certain system components “may remotely, directly or indirectly trigger” the recipient’s device “to transmit a content request” by sending a message that includes “a link or a shortcut which may trigger a content request by” the recipient’s device. Ex-1009 ¶175. For example, Levkovitz discloses that a “user may receive an indication that an incoming commercial content item” (or message) is received, in which case, the user can “press or click” on a soft-key and be provided user-selectable operations via an input unit that are associated with the message or the “content item embedded therein” (e.g., advertisement). Ex-1009 ¶269. The operations may include virtually visiting, browsing, or redirecting the user to “a

certain website (e.g., through a [URL] or other shortcut or pointer, which may be pre-provided with the content item).” *Id.*

71. A POSITA would have been motivated to implement Levkovitz’s teachings of embedding advertisements in an incoming message and providing user-selectable operations that enable the recipient to interact with the advertisements and/or multimodal messages, using Levkovitz’s ad server (Fig. 7 (purple)) with Still’s system (Fig. 4 (purple)). Still already discloses that content may include “content for ... advertising” “based on a demographic trait of the recipient, or the like” and that users can “forward a multimedia content to a recipient.” Ex-1008 ¶¶21-22, 45. Levkovitz discloses that “text analysis” of text messages can be used “to selectively target advertisements to” the user such that if they receive or send a text message having the keyword “football” then “the system may modify” the text message “by selectively inserting or adding an advertisement related to that keyword.” Ex-1009 ¶222. Moreover, Levkovitz allows a user to interact with advertisements and/or multimedia messages by, e.g., deleting, selecting, forwarding, and replying to content (if the content is messages) and storing a coupon or buying tickets or goods (if the content is an advertisement). Ex-1009 ¶¶67, 303. Thus, a POSITA would have known that implementing Levkovitz’s teachings to embed an advertisement into an incoming message and provide user-selectable options for user interaction with Still’s system would result in a more customizable and user-friendly

system, with targeted advertisements for users. Given that advertising was a well-known and lucrative interactive service, a POSITA would have been interested in including this functionality in Still's system and would have looked to Levkovitz as a specific example of customized advertising techniques to combine with Still.

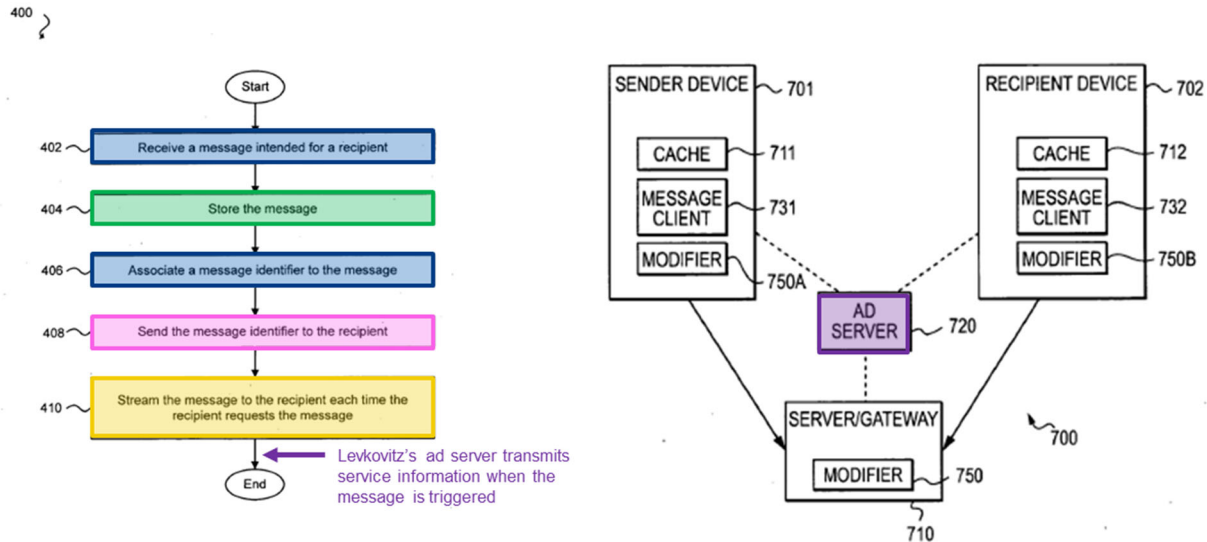


FIG. 4

FIG. 7

72. A POSITA would have been motivated to combine Still and Levkovitz because they would have recognized a benefit of incorporating Levkovitz's teachings of embedding advertisements in an incoming message and providing user-selectable operations that enable the recipient to interact with the advertisements (and/or multimodal messages) with a system like Still. The combined system would improve the user's interactive experience by providing users customized advertisements based on their content request and allow them to control what advertisements they interact with by, e.g., deleting, selecting, forwarding, and

replying to content (if the content is messages) and storing a coupon or buying tickets or goods (if the content is an advertisement). Ex-1009 ¶¶67, 303.

73. A POSITA would also have had a reasonable expectation of success in combining the teachings of Still-Levkovitz because Still and Levkovitz both disclose methods for enabling recipient interaction through the delivery of multimodal messages using familiar elements such as mobile devices, SMS messaging, and servers. Ex-1008 ¶21; Ex-1009 ¶170. For example, common operating systems in commercially available mobile phones that I used by 2009 all had built in support for SMS messaging. *See, e.g.*, Ex-1033 (describing the “revolutionary” iPhone that “redefines what users can do on their mobile phones” including “mak[ing] calls by simply pointing at a name or number,” “go directly to those messages” that the user wants to listen to and “immediately randomly access those messages that interest them most,” “easily send and receive SMS messages in multiple sessions,” “easily choose a photo ... to include in an email”); Ex-1030 (Nokia 3250 User Guide); Ex-1040 (Nokia 9300 User Guide). They also all had connections to servers that a POSITA would have been familiar with. For example, contacts, applications, photos and messages could all be stored on device storage. Graphical user interfaces allowed users to interact with applications for making phone calls, looking up contacts, sending messages, etc. And connections to servers were provided for browsing the web and sending messages among other things. These are all

exemplified in the January 9, 2007 announcement of the Apple iPhone (Ex-1033) which includes a description of the camera and photo management application (which provided storage for photos and a graphical user interface), an SMS application, and a web browser, which a POSITA would understand worked by connecting to web servers. Furthermore, I recall during that demonstration of the phone at the time of the announcement that the web browser was shown connecting to the New York Times web server. As such, it would have been well within the skill of a POSITA to implement Levkovitz's embedded/customized advertisements and user-selectable operations into Still's system. Ex-1008 ¶21; Ex-1009 ¶170.

## 2. Independent Claim 1

- a. **Element 1[pre]: A method of enabling a recipient to interact with an interactive multimodal message triggered on a mobile device of said recipient, comprising the steps of:**

74. In my opinion, Still alone or Still-Levkovitz teaches Claim 1's preamble to the extent it is limiting. Still teaches an interactive multimodal message triggered on a mobile device of the recipient. Still teaches receiving, using a server, a message from a sender for an intended recipient; "assigning a unique pairing identifier for use by the recipient"; transmitting a notice, which includes the unique pairing identifier, to the recipient; "receiving a request from the ... unique pairing identifier"; and using the server to "stream[] the message to the recipient." Ex-1008 ¶7; *see also id.* ¶¶8 (similar disclosures using a "message identifier": "receiving a

message intended for a recipient using a server, storing the message on the server, associating a message identifier with the message, the message identifier configured to distinguish the message from other messages intended for the recipient, and sending the message identifier to the recipient[,]” and “streaming the message to the recipient each time the recipient requests the message, the request including the message identifier”), 42-43. Still further states that “[a] multimedia content ... may be associated with the message” and “streamed to the recipient each time” they “request[] the message.” Ex-1008 ¶45. The multimedia content may include “music, electronic books, and other forms of audio entertainment content, as well as video content, voice messages, animation content, or other forms of content for communication, advertising, entertainment, etc.” *Id.* Still also discloses an input/output (“I/O”) interface, which “may be any device that can receive input for controlling and accessing the bubble server” and “may couple to a keyboard, touchscreen, mouse, keypad, ... or any other input or output device.” Ex-1008 ¶54. A POSITA would have understood that Still’s messages with multimedia content are interactive multimodal messages because they comprise a seamless combination of graphics, text, and audio output or a combination of the same with speech, text, and touch input. A POSITA would have understood that “seamless” in this context means at least that the graphics, text, and audio output or speech, text, and touch input (or combination thereof) are part of the same interactive message sent to the

recipient, and not sent separate separately. In particular, Still discloses that its messages may be associated with multimedia content “including, but not limited to, audio content (e.g., voice messages), music, electronic books, video content, animation content, and/or other forms of content for communication, advertising, entertainment, and so forth.” Ex 1008 ¶21. The “video content” is graphics, the “electronic books” and/or the SMS text message sent to the recipient is text, the keypad or touchscreen used to type a text message is touch input, and the “audio content (e.g., voice messages)” is speech and audio output. For example, POSITA would have understood that Still’s messages seamlessly combine speech, text, and touch input such as when a text message that is inputted by the user on a keypad or touchscreen includes a link to a voice message (speech). A POSITA would also have understood that Still’s messages seamlessly combine graphics, text, and audio output such as when a text message is associated with video content (graphics) that is outputted audibly and visually to the recipient (audio output).

75. Still also teaches a method of enabling a recipient to interact with the triggered interactive multimodal message. Still states that the recipient may “dedicate” the content to another recipient or “forward” it to a recipient. Ex-1008 ¶22. The ’949 Patent discloses similar examples of recipient interaction; *see also* Ex-1001, 5:34-39 (examples of recipient “interaction” include the recipient “forwarding the interactive multimodal message” to another recipient).

- b. Element 1[a]: creating said interactive multimodal message by a sender using a client application available to said sender, wherein said created interactive multimodal message is stored at a server;**

76. In my opinion, Still alone or Still-Levkovitz teaches Element 1[a].

77. (Ground 1) Still teaches creating an interactive multimodal message (i.e., text and multimedia content) (*see* Section XI.A.2.a, ¶¶74-75). *See, e.g.*, Ex-1008, Abstract (“A system and method for delivering messages and/or multimedia content using a short message services (SMS) telecommunication network.”), ¶45 (multimedia content may include “music, electronic books, and other forms of audio entertainment content, as well as video content, voice messages, animation content, or other forms of content for communication, advertising, entertainment, etc.”), 54 (I/O interface, “may be any device that can receive input for controlling and accessing the bubble server” and “couple to a keyboard, touchscreen, mouse, keypad, ... or any other input or output device.”). Still also teaches creating the interactive multimodal message using a client application available to the sender.

78. First, the sender creates the interactive multimodal message by using their mobile device 110 to create and send an SMS or SVMS message for an intended recipient to the bubble server (202, blue). Ex-1008 ¶27 (“[T]he bubble server 102 ... receives a message from a sender intended for the recipient. ... The sender may use the mobile device 110 ... to send the message.”); *see also id.* ¶34 (“The sender may associate a multimedia content ... with the message, and the multimedia content may

be streamed to the recipient.”), Fig. 2 (annotated). A sender may access multimedia content 106 via the communication network 104, which connects the mobile devices to the bubble server 102. Ex-1008 ¶21. A sender may listen to and/or view the content, dedicate the content to a recipient, and/or forward the content to a recipient. *Id.* ¶22. “The content 106 may be accessed by several methods, including, but not limited to the web or telephone devices.” *Id.* ¶21.

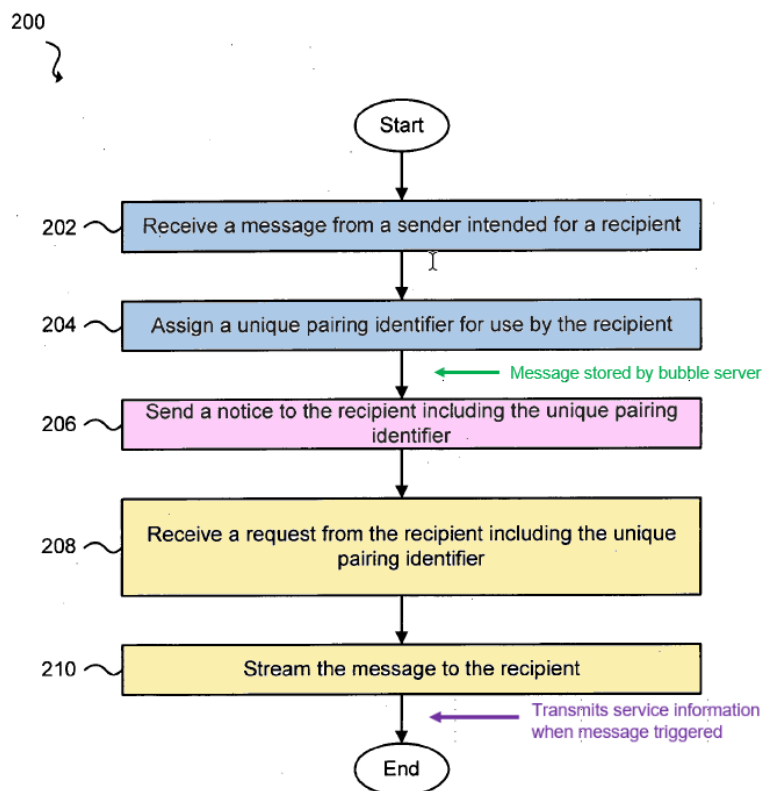


FIG. 2

79. A POSITA would have understood that Still’s web browser on the sender’s mobile device, which in turn, accesses the underlying functionality and software of the bubble server via “the web” is a program present on or accessible by the sender’s mobile device that is used by a sender to create a message, such as an

SMS messaging application on the mobile device with web search capabilities or a web browser. This basic client-server architecture along with the design choice of how to structure which components are placed at which location in the system has been known for decades, as I discuss in my technical background section. (*See* Section VII.C, ¶¶39-40).

80. Computer systems have been architected for decades with a wide range of structures. Historically, computers were big and expensive and they provided “time shared” access to multiple terminals. Sometimes those terminals (a.k.a. “clients”) were “dumb” or “thin”, and provided primarily input and output capabilities while most of the computation was provided at the “server”. Other times, those clients had greater computation capability, and in the early 1980s with the introduction of “personal computers”, those clients (while still often connected to servers) had sufficient computational capabilities to run independently.

81. Back in 1992, client-server computing was significant enough that it was described in an article in Communications of the ACM – the broad interest magazine of the main professional international computer society. That article characterized some of the key elements of client-server computing, including that the client typically communicates with the server, transmitting queries or commands, performs data analysis on query or command results from the server and presents the Graphical User Interface (GUI). On the other side, servers typically provide a

service to the client, responding to the queries or commands – and do so in a way that hides much of the details of its implementation so that clients with various kinds of software and hardware can work with it. This article also explains that as far back as 1992, it was common to have the GUI of an application displayed on a computer remote from the application. It describes the X Window System that commonly ran on Unix environments which “provides network transparency so that an application displaying a chart on a screen could be running on a local machine or a remote machine thousands of miles away.” Ex-1025, 91.

82. As illustrated in Figure 2, the bubble server receives the message from the sender (202, blue), “assigns a unique pairing identifier” (204, blue), transmits a notice the recipient, which includes the unique pairing identifier (206, pink), and receives a request for the message from the recipient via the unique pairing identifier (208, yellow). Ex-1008 ¶19; *see also id.* ¶¶8 (similar disclosures using a “message identifier”: “receiving a message intended for a recipient using a server, storing the message on the server, associating a message identifier with the message, the message identifier configured to distinguish the message from other messages intended for the recipient, and sending the message identifier to the recipient[,]” and “streaming the message to the recipient each time the recipient requests the message, the request including the message identifier”), 42-43.

83. Still's bubble server is a network-based server that is capable of running applications, maintaining storage, and accessing other network components. For example, Still discloses that the bubble server "may be a computing device configured to store and process instructions, store and process data, and communicate with the ... mobile devices 110." Ex-1008 ¶19. Still further discloses that the bubble server "comprises a processor 610 ... configured to execute executable instructions," "a memory system 620, a storage system 630, an input/output ('I/O') interface 640, a communication network interface 650, and a display interface 660." Ex-1008 ¶52. A POSITA would have recognized that a portion of the application necessary to create the interactive multimodal message—assigning a unique pairing identifier (or, as explained below, a combined unique pairing identifier and specific "message identifier") and sending a notification to the recipient that includes the unique pairing identifier so that the recipient can request the message—resides on the bubble server and is "available to said sender."

84. In sum, Still teaches "using a client application available to said sender," that includes a client application on the sender's device for composing a new message and communicating via the "web" with the bubble server to identify content to associate with the message, and an application on the bubble server for interacting with the sender's device to provide access to content, assign a unique

pairing identifier, and notify the recipient of an awaiting message that the recipient can request and stream through the unique pairing identifier.

85. A POSITA would have understood that Still's web browser in combination with the bubble server are used by the sender to create a message in the same way that the '949 Patent contemplates—via SVMS or a web interface. Ex-1008 ¶¶20 (bubble server may communicate with the mobile device “using appropriate protocols such as” HTTP, SVMS, cellular telephone protocols, and “other standards for communicating with digital devices”); Ex-1001, 2:10-12 (“client application may be available to the sender ... via a web interface”), 3:56-59 (or in a SVMS “application provided over a voice connection”). In particular, Still states that “[t]he content may be accessed by several methods, including, but not limited to the web or telephone devices.” Ex-1008 ¶21. That is, a person operating a web browser client application on Still's mobile device would access the functionality and software of the bubble server over the web.

86. Although unnecessary in view of the construction of “client application available to said sender” discussed above (*see* Section IX.C, ¶¶56-58), a POSITA would also have understood that the details of which application components are put on the client, versus put on the server and accessed by the client on the sender's device, would have been a matter of routine design choice to a POSITA. *See, e.g.*, Section VII.C, ¶¶39-46. For example, a POSITA would have understood that there

may be certain parts of the application that are executed by the device, but which access additional functionality on a web server as needed, depending on how the system is architected. Whichever portion is put on the client would constitute a client application. As another example, a client application entirely on the sender's device could do all of the creating of the interactive multimodal message and access content locally on the sender's device—such as photographs or audio recordings—and assign unique pairing identifiers itself, and then communicate the entire interactive multimodal message to the bubble server, which would then forward it to recipients using standard protocols. A POSITA would have been motivated to architect the system this way, if they desired, because it would have enabled the user to create an interactive multimodal message even in areas of limited network activity, for example, “without dependence on operational status or location of the device,” as taught by Levkovitz and as I explain in more detail below. Ex-1009 ¶262.

87. Finally, as claim element 1[a] requires, Still also “teaches wherein said created interactive multimodal message is stored at a server.” Still states that “[t]he message may be *stored on [the] bubble server.*” Ex-1008 ¶31.

88. (Ground 2) Levkovitz teaches creating an interactive multimodal message by a sender using a client application that is present on the sender's mobile device. Levkovitz states with Figure 7 that “sender device 701 may include *a message client 731*” (blue), which may incorporate, e.g., a software component

and/or hardware component that is “able to send and/or receive a message, a textual message, a graphical message, a SMS message, a MMS message, an IM item,” an Email message, “or the like.” Ex-1009 ¶240, Fig. 7 (annotated). Levkovitz also states that message client 731 “may be installed in device 701.” *Id.* ¶241. Moreover, Levkovitz states that message client 731 can be employed “as a SMS/MMS/IM/Email application” that is “able to send messages, receive messages, compose or edit outgoing messages intended for transmission, present or view or playback incoming message[s], delete previous messages, or the like.” *Id.* ¶240. Messaging client 731 may also retrieve “one or more content items or advertisements” using ad server 720 (purple) and/or local cache 711. *Id.* Levkovitz additionally discloses that message client 731 (732) “may be a wrapper application, a plug-in, an add-on, an envelope, or a front-end to a pre-programmed or pre-provided client application of device 701 (702).” Ex-1009 ¶241.

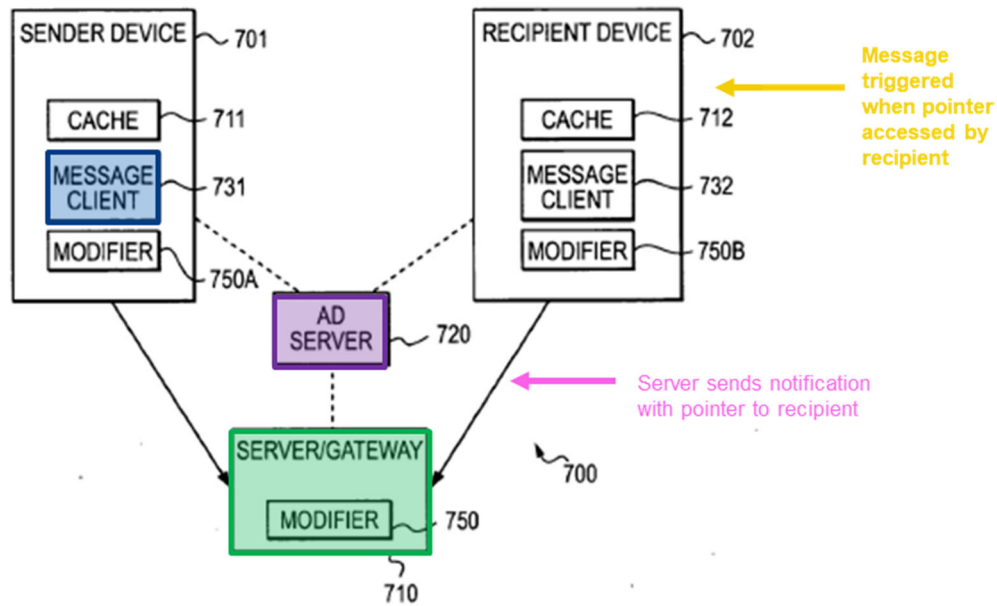


FIG. 7

89. A POSITA would have been motivated to combine Still and Levkovitz because they would have recognized a benefit of implementing Levkovitz's teachings of a client application located on the mobile device (instead of partially on a server accessible by the mobile device's application) with Still's system, to the extent it is not already implemented as such in Still. One motivation for doing so would be to have more functionality on the client mobile device such as the ability for a user to create messages in areas of limited connectivity. Levkovitz's client application allows "the user to selectively browse and/or view ... one or more content items that are stored" in a content repository using a content items browser on the device. Ex-1009 ¶262. The content items browser operates when the device "is online and/or ... offline," which "allow[s the] user to selectively browse and/or

view stored content items without dependence on the operational status or location” of the device. *Id.* A POSITA would have recognized the importance of this benefit to users and been motivated to implement this functionality with Still’s system. The combined system would allow the user to browse for content items and create interactive multimodal messages regardless of whether they are online, which would improve the user’s experience and save the user time, as the user would not have to wait to create a message until they were in a situation where their device could connect to a server. That would save them from having to remember the content they wanted to add to a message at a later time (as well as remembering to send the message in the first place). Since the loss of operation due to lack of service may well be out of the user’s control, being able to send a message when it was the user’s choice of when to do so would let them maintain control of the situation which would avoid potential frustration. Situations where users are not in control of their experience is in tension with Shneiderman’s Seventh Golden Rule – supporting internal locus of control. In particular, if a user can not initiate the message when they want to, but instead have to respond to the availability of the network, that is a conflict with this “golden rule.” Shneiderman is a very well-known expert in user experience and these “golden rules” are well-known throughout the field through his

widely used multiple editions of the textbook “Designing User Interfaces”<sup>19</sup> that they have been in for decades.

*Support internal locus of control.* Experienced operators strongly desire the sense that they are in charge of the interface and that the interface responds to their actions. Surprising interface actions, tedious sequences of data entries, inability to obtain or difficulty in obtaining necessary information, and inability to produce the action desired all build anxiety and dissatisfaction. Gaines (1981) captured part of this principle with his rule *avoid acausality* and his encouragement to make users the *initiators* of actions rather than the *responders* to actions.

Ex-1045, 75. This would have been an important benefit for the user as many existing systems that allowed the user to browse for content were only operational when the user was online.

90. Another motivation would be to provide the user improved targeting of content such as advertisements. Levkovitz states that its client application may include a “content client” component (Ex-1009 ¶95) that periodically establishes a connection with an ad server “to upload technical information about [the] device” and/or “personal information about a user of [the] device.” *Id.* ¶166. The ad server uses this information “to selectively choose one or more advertisements, which may be personally tailored to the user of” the sender device. *Id.* ¶194. Moreover, Levkovitz discloses that “text analysis” of text messages can be used “to selectively

---

<sup>19</sup> Ben Shneiderman & Catherine Plaisant, *Designing the User Interface* (4th ed., 2005) (Ex-1045).

target advertisements to” the user such that if they receive or send a text message having the keyword “football” then “the system may modify” the text message “by selectively inserting or adding an advertisement related to that keyword.” Ex-1009 ¶222. Still already discloses that content may include “content for ... advertising” “based on a demographic trait of the recipient, or the like.” Ex-1008 ¶21. The Still-Levkovitz combination would therefore result in a more customized and user-friendly experience, with targeted advertisements for users. Given that advertising was a well-known and lucrative interactive service, a POSITA would have been interested in including this functionality in Still’s system and would have looked to Levkovitz as a specific example of customized advertising techniques to combine with Still.

91. The Still-Levkovitz combination would also result in a more reliable experience for the user since messages could be recorded even if access to the server were temporarily unavailable. Furthermore, the recording of the voice could be higher quality if recorded on the client since it would not have the potential of being degraded when transmitted to the server during recording. In any case, even if an application on a server were involved, a POSITA would have understood that there would have had to also be software (i.e., an application) on the mobile device in order to interact (i.e., transmit voice or a message) to that server. This is the nature of client-server applications, as I explain in my technical background section (*see*

Section VII.C, ¶¶39-40). Stated simply, a processor based client without any software to communicate with a server would not have any way to send a message to the server.

92. A POSITA would have had a reasonable expectation of success in combining Still and Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations. In particular, both client and server are general purpose computing systems and each have the capacity to run all kinds of software including software applications. For example, common operating systems in commercially available mobile phones that I used by 2009 all had built in support for SMS messaging. *See, e.g.*, Ex-1033 (describing the “revolutionary” iPhone that “redefines what users can do on their mobile phones” including “mak[ing] calls by simply pointing at a name or number,” “go directly to those messages” that the user wants to listen to and “immediately randomly access those messages that interest them most,” “easily send and receive SMS messages in multiple sessions,” “easily choose a photo ... to include in an email”); Ex-1030 (Nokia 3250 User Guide); Ex-1040 (Nokia 9300 User Guide). They also all had connections to servers that a POSITA would have been familiar with. For example, contacts, applications, photos and messages could all be stored on device storage. Graphical user interfaces allowed users to interact with applications for making

phone calls, looking up contacts, sending messages, etc. And connections to servers were provided for browsing the web and sending messages among other things. These are all exemplified in the January 9, 2007 announcement of the Apple iPhone (Ex-1033) which includes a description of the camera and photo management application (which provided storage for photos and a graphical user interface), an SMS application, and a web browser, which a POSITA would understand worked by connecting to web servers. Furthermore, I recall during that demonstration of the phone at the time of the announcement that the web browser was shown connecting to the New York Times web server. As such, it would be well within the skill of a POSITA to implement the functionality of a client application on any of the devices of Still or Levkovitz. Ex-1008 ¶21; Ex-1009 ¶170.

**c. Element 1[b]: sending a notification comprising a pointer to said stored interactive multimodal message to said mobile device of the recipient by said server;**

93. In my opinion, Still alone or Still-Levkovitz teaches Element 1[b].

94. (Ground 1) Still teaches an interactive multimodal message stored at a server (*see* Sections XI.A.2.a (¶¶74-75) and XI.A.2.b (¶¶76-87)). *See, e.g.*, Ex-1008 ¶¶31 (“[t]he message may be stored on [the] bubble server”), 45 (multimedia content may be associated in with the message which may include “music, electronic books, and other forms of audio entertainment content, as well as video content, voice messages, animation content, or other forms of content for communication,

advertising, entertainment, etc.”), 54 (describing an I/O interface that “can receive input for controlling and accessing the bubble server”). Still further teaches sending a notification comprising a pointer to the stored interactive multimodal message to the recipient’s mobile device by the server. That is, once a message is received for an intended recipient by the bubble server (202, blue), the bubble server “assigns a unique pairing identifier” for the recipient to use (204, blue). Ex-1008 ¶19, Fig. 2 (annotated). The unique pairing identifier “uniquely identifies the sender to the recipient, and allows the recipient to receive the sender’s messages.” Ex-1008 ¶28. A unique pairing identifier may be, for example “an asterisk and a number 21, e.g., ‘\*21.’” *Id.* The bubble server then “sends a notice to the recipient,” which includes “the unique pairing identifier” (206, pink). *Id.* ¶19.

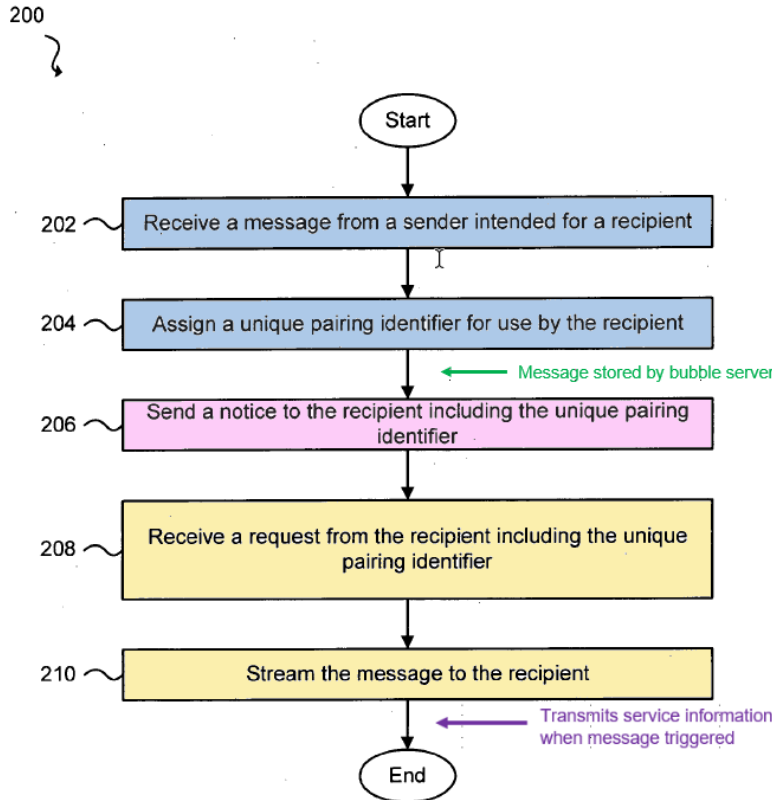


FIG. 2

95. The notice is “displayed on the recipient’s mobile device 110 as an incoming notice” and includes the unique pairing identifier. *Id.* ¶29. The notice also advises “the recipient that a message from the sender is available for” streaming. *Id.* The recipient may send a request to the server for the multimedia message and/or content using their mobile device “to click, tap, and/or otherwise enter the unique pairing identifier.” Ex-1008 ¶30. The unique pairing identifier therefore “allows the bubble server 102 to receive a request from the recipient requesting the message.” *Id.* ¶28.

96. A POSITA would have understood that Still’s “unique pairing identifier” that is assigned to the stored interactive multimodal message and sent

within the notice to the recipient is a pointer because it is a link that directs to the interactive multimodal message. A POSITA would have understood that a “link” as used in the ’949 Patent is a broad term used to describe a wide range of mechanisms that connect or “link” a user to the interactive multimodal message. This understanding is supported by the disclosure of the ’949 Patent when it explains that a “text link” is one example of a link. Ex-1001, 4:16-18 (“The pointer may, for example, be a text link to the stored interactive multimodal message, a USSD code, etc.”). A POSITA would have understood that at least sometimes, the unique pairing identifier will have a 1:1 relationship with the message (by pointing to the most recent message<sup>20</sup> or when there’s been only one message shared between sender/receiver). For example, if the message was a single voicemail, then a POSITA would have understood that following the link would take the user to that single voicemail. Ex-1008, ¶30, Cl. 1 (server receives “a request from the recipient requesting the message, the request including the unique pairing identifier”). As such, Still’s “unique pairing identifier” is a pointer because it is used by the recipient (e.g., by clicking or tapping it) to access the stored multimodal message.<sup>21</sup> Ex-1008

---

<sup>20</sup> This is strongly suggested because, in response to receiving a request including the unique pairing identifier in step 208, the server will “[s]tream *the message* to the recipient” at step 210. Ex-1008 ¶31.

<sup>21</sup> Although not required by the claim, Still also teaches an alternative message identifier embodiment that distinguishes between messages. Ex-1008 ¶8. A POSITA could have included the message identifier in addition to the unique pairing

¶¶28, 30. More details on this feature are also provided in Still's provisional application no. 60/898,678 (Ex-1044), which was filed on January 30, 2007 and I understand is incorporated by reference in Still. *See, e.g.*, Ex-1008 ¶1 ("This application claims the benefit and priority of U.S. Provisional Application Ser. No. 60/898,678 titled 'Systems and Methods for Voice Messaging,' filed Jan. 30, 2007, which is hereby incorporated by reference."); Ex-1044, 3 ("The user may record a message via a web interface and a microphone on their computer. The user may send a message to the system and the message is recorded and stored. The system may send a notification to the recipient indicating that they have received a message from a sender. The recipient may click on a link within an SMS notification, which may dial into the system, and start a playback of the recorded message. The recipient may perform a number of actions on the message (delete, forward, etc.) and can also reply to a sender message."), 6-7 ("In some embodiments, a pair of number links is used (the pair consists of numbers from Sender A and Recipient B). The first number link in the SMS may be the 'listen' code. The pairing of the listen code with the calling party MSISDN may bring the user directly to the specified message. (When MSISDN 4157649876 dials the MSISDN 3334576543, the pairing indicates that

---

identifier, if seeking to provide a pointer to each of a series of messages from one sender, and would have been motivated to do so to provide additional flexibility to the recipient such as clicking on older messages to access them directly without having to listen to more recent messages first.

MSISDN 4157649876 is trying to receive message #2 in their list). ... The second number link the SMS may be the ‘reply’ code. The reply code is intended to be a fast an[d] easy mechanism for recipients to use their SMS box as a ‘proxy’ for a directory or ‘Bubble’ ADDRESS BOOK. ... For the ‘reply code’, one 10-digit MSISDN ‘reply code’ can be used for a pairing of people.”).

97. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact

card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF.

98. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041.

99. I note that, as mentioned above, Still also teaches associating a “message identifier” with the message and sending the message identifier to the recipient. Ex-1008 ¶8. Still teaches “receiving a message intended for a recipient using a server, storing the message on the server, associating a message identifier with the message, the message identifier configured to distinguish the message from other messages intended for the recipient, and sending the message identifier to the recipient.” *Id.* “The method further includes streaming the message to the recipient each time the recipient requests the message, the request including the message identifier.” *Id.*; *see also id.* at Fig. 4. Still states that “[t]he message identifier is not based on the sender, and may be configured to distinguish the message from other messages intended for the recipient” and “[t]he association of the message identifier with the message allows the recipient to request and stream the message each time

the recipient requests the message via the message identifier.” *Id.* ¶42. Moreover, “[t]he message identifier may be in the form of a notice.” *Id.* ¶43. A POSITA would have found it obvious from Still’s disclosures that the recipient may send a request to the server for the multimedia message and/or content using their mobile device “to click, tap, and/or otherwise enter the” *message identifier* in the same way that the recipient sends a request to the server using the *unique pairing identifier*. *See, e.g.,* Ex-1008 ¶30. A POSITA would further have understood that Still’s “message identifier” that is assigned to the stored interactive multimodal message and sent within the notice to the recipient is a pointer for the same reasons discussed above for the unique pairing identifier because it is a link that directs to the interactive multimodal message. Therefore, a POSITA would have understood that the message identifier in Still could be used in place of the unique pairing identifier or in combination with it and meet this limitation of the claims.

100. (Ground 2) Levkovitz also teaches sending a notification comprising a pointer to a stored interactive multimodal message to the recipient’s mobile device. Levkovitz states that a recipient “may receive an indication that an incoming commercial content item/advertisement/SMS/MMS/IM/Email message is received,” in which case, the recipient can “press or click” on a soft-key and be provided user-selectable operations via an input unit. Ex-1009 ¶269. The user-selectable operations may include, e.g., virtually visiting, browsing, or redirecting

the recipient to “a certain website (e.g., through a [URL] or other shortcut or pointer, which may be pre-provided with the content item).” *Id.* Levkovitz further states that certain components of the system “may remotely, directly or indirectly trigger” the user’s device “to transmit a content request” by sending a message “having a link or a shortcut which may trigger a content request by” the recipient’s device. Ex-1009 ¶175.

101. A POSITA would have recognized that Levkovitz specifies additional details and features (such as to “press or click” a link) that could be implemented into the pointer/link taught by Still, and implemented these features into Still—to the extent it is not already included as part of Still’s unique pairing identifier and/or to the extent additional capabilities were necessary—to allow the system to more efficiently and quickly access a content request related to a specific message. Levkovitz’s pointer requires a user only to “press or click” on a link, which a POSITA would understand would be faster for users than Still’s entering of the unique pairing identifier, such as “\*21”.

102. A POSITA would have had a reasonable expectation of success in combining Still and Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations. In particular, pressing or clicking on links was an extremely well-known technology as it was at the core of Web

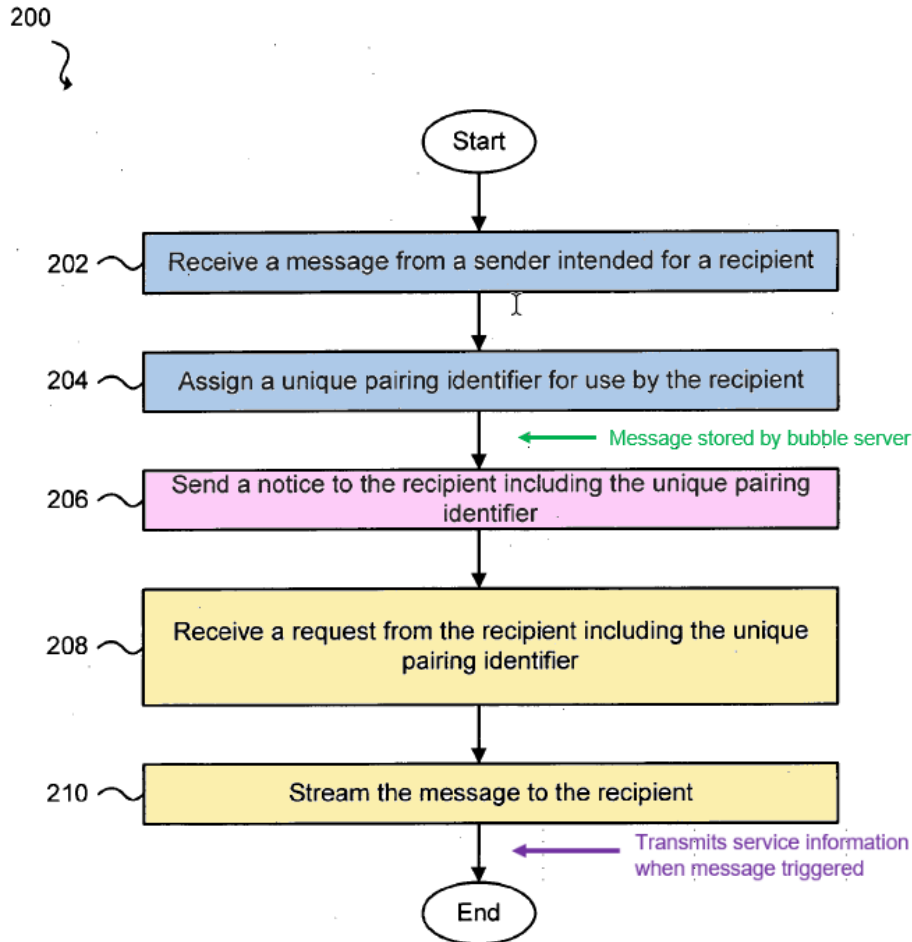
technology (*see* Section VII.B, ¶¶36-38). As such, a POSITA would have been abundantly familiar with it and would have had no problems implementing it in a wide range of standard computer systems such as those disclosed by Still.

**d. Element 1[c]: triggering the stored interactive multimodal message on the mobile device of the recipient by accessing said pointer in said notification; and**

103. In my opinion, Still alone or Still-Levkovitz teaches Element 1[c].

104. (Ground 1) Still discloses teaches an interactive multimodal message stored at a server (*see* Sections XI.A.2.a (¶¶74-75) and XI.A.2.b (¶¶76-87)). *See, e.g.*, Ex-1008 ¶¶31 (“[t]he message may be stored on [the] bubble server”), 45 (multimedia content may be associated in with the message which may include “music, electronic books, and other forms of audio entertainment content, as well as video content, voice messages, animation content, or other forms of content for communication, advertising, entertainment, etc.”), 54 (describing an I/O interface that “can receive input for controlling and accessing the bubble server”). Moreover, Still teaches the claimed notification comprising a pointer to the stored interactive multimodal message that is sent to the recipient’s mobile device by the server (*see* Section XI.A.2.c, ¶¶93-99). *See, e.g.*, Ex-1008 ¶¶19 (bubble server “sends a notice to the recipient,” which includes “the unique pairing identifier” assigned to the message), 30 (recipient sends a request to the server for the message by using their mobile device “to click, tap,” or “enter the unique pairing identifier”).

105. Still further teaches triggering the server-stored interactive multimodal message on the recipient's mobile device by accessing the pointer in the notification. Still teaches with Figure 2 that "a unique pairing identifier is assigned" (204, blue), which enables "the recipient to receive the sender's messages" and "bubble server 102 to receive a request" for the message from the recipient. Ex-1008 ¶28. Moreover, "a notice is sent to the recipient," which is "displayed on the recipient's mobile device 110 as an incoming notice" and includes the unique pairing identifier (206, pink). *Id.* ¶29. The notice includes text that advises "the recipient that a message from the sender is available for" streaming. Ex-1008 ¶29. A request containing the unique pairing identifier is received by the bubble server from the recipient (208, yellow) when the recipient uses their mobile device "to click, tap, and/or otherwise enter the unique pairing identifier." Ex-1008 ¶30. Bubble server 102 streams the message to the recipient (210, yellow). Ex-1008 ¶31; *see also id.* ¶¶8 (similar disclosures using a "message identifier": "receiving a message intended for a recipient using a server, storing the message on the server, associating a message identifier with the message, the message identifier configured to distinguish the message from other messages intended for the recipient, and sending the message identifier to the recipient[,]" and "streaming the message to the recipient each time the recipient requests the message, the request including the message identifier"), 42-43.



106. A POSITA would have understood that the recipient accessing the pointer (i.e., unique pairing identifier) in the notification by clicking, tapping, or entering the unique pairing identifier (e.g., “\*21”) “triggers the stored interactive multimodal message” because it causes the bubble server to stream the message to the recipient’s mobile device. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or

tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

107. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF.

108. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041.

109. I note that Still also teaches associating a “message identifier” with the message and sending the message identifier to the recipient. Ex-1008 ¶8. Still teaches “receiving a message intended for a recipient using a server, storing the message on the server, associating a message identifier with the message, the message identifier configured to distinguish the message from other messages intended for the recipient, and sending the message identifier to the recipient.” *Id.* “The method further includes streaming the message to the recipient each time the recipient requests the message, the request including the message identifier.” *Id.*; *see also id.* at Fig. 4. Still states that “[t]he message identifier is not based on the sender, and may be configured to distinguish the message from other messages intended for the recipient” and “[t]he association of the message identifier with the message allows the recipient to request and stream the message each time the recipient requests the message via the message identifier.” *Id.* ¶42. Moreover, “[t]he message identifier may be in the form of a notice.” *Id.* ¶43. A POSITA would have found it obvious from Still’s disclosures that the recipient may send a request to the server for the multimedia message and/or content using their mobile device “to click, tap, and/or otherwise enter the” *message identifier* in the same way that the recipient sends a request to the server using the *unique pairing identifier*. *See, e.g.*, Ex-1008 ¶30. A POSITA would further have understood that Still’s the recipient accessing the pointer (i.e., message identifier) in the notification by clicking, tapping, or

entering the message identifier “triggers the stored interactive multimodal message” for the same reasons discussed above for the unique pairing identifier because it causes the bubble server to stream the message to the recipient’s mobile device. Therefore, a POSITA would have understood that the message identifier in Still could be used in place of the unique pairing identifier or in combination with it and meet this limitation of the claims.

110. (Ground 2) Levkovitz also teaches triggering a stored interactive multimodal message on the recipient’s mobile device by accessing a pointer in the notification. Levkovitz states that certain components of the system “may remotely, directly or indirectly trigger” the recipient’s device “to transmit a content request” by sending a message “having a link or a shortcut which may trigger a content request by” the recipient’s device. Ex-1009 ¶175. A recipient receives “an indication that an incoming commercial content item/advertisement/SMS/MMS/IM/Email message is received,” and the recipient can “press or click” on a soft-key to be provided user-selectable operations via an input unit. Ex-1009 ¶269. The user-selectable operations may include, e.g., virtually visiting, browsing, or redirecting the user to “a certain website (e.g., through a [URL] or other shortcut or pointer, which may be pre-provided with the content item).” *Id.*; *see also id.* ¶175 (“For example, in one embodiment, device 170 may be remotely triggered using a ‘ping’ or ping-like message or packet, a ‘wake up’ message or packet, or the like. In some

embodiments, for example, communicator 150, SMS gateway 163, or other component of the system 100 may send to device 170 a data item or message, e.g., having a link or shortcut with may trigger a content request by device 170. In some embodiments, device 170 may transmit a content request in response to an incoming signal or message, a background incoming signal or message, a user-transparent incoming signal or message, a remote signal or message, or the like.”).

111. A POSITA would have recognized that Levkovitz specifies additional details and features (such as to “press or click” a link) that could be implemented into the pointer/link taught by Still, and implemented these features into Still—to the extent it is not already included as part of Still’s unique pairing identifier and/or additional capabilities were necessary—to allow the system to more efficiently and quickly access a content request related to a specific message. Levkovitz’s pointer requires a user only to “press or click” on a link, which a POSITA would understand would be faster for users than Still’s entering of the unique pairing identifier, such as “\*21”.

112. A POSITA would have had a reasonable expectation of success in combining Still-Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations. In particular, pressing or clicking on links was an extremely well-known technology as it was at the core of Web technology

(see Section VII.B, ¶¶36-38). As such, a POSITA would have been abundantly familiar with it and would have had no problems implementing it in a wide range of standard computer systems such as those disclosed by Still.

**e. Element 1[d]: transmitting service information to the mobile device of the recipient through said triggered interactive multimodal message;**

113. In my opinion, Still alone or Still-Levkovitz teaches Element 1[d].

114. (Ground 1) Still teaches a triggered interactive multimodal message (see Section XI.A.2.d, ¶¶103-109). See, e.g., Ex-1008 ¶¶30 (recipient uses their mobile device “to click, tap, and/or otherwise enter the unique pairing identifier”), 31 (bubble server streams the message to the recipient). Still also teaches transmitting service information to the recipient’s mobile device through the triggered message. Still states that multimedia content “may be associated with” the message that is sent to the recipient, such as, e.g., “content for ... advertising” that is “based on a demographic trait of the recipient, or the like.” Ex-1008 ¶45. A POSITA would have understood that service-related content information encompasses advertising content that is “associated with the message” sent to the recipient. This is consistent with the disclosures of the ’949 Patent, which state that “transmitted service information may, for example, comprise advertisements.” Ex-1001, 4:38-40. In particular, a POSITA would have understood that advertisements associated with a message would also be transmitted to the mobile device so that a

user could see and then click on an advertisement, which was standard practice for mobile ads in 2009. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

115. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF.

116. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041. As such, the advertisements are content information that are related to a service (providing information about the things being advertised).

117. (Ground 2) Levkovitz also teaches transmitting service information to the recipient’s mobile device through the triggered interactive multimedia message. Levkovitz teaches that system 100 may include suitable components such as MMS Center 161, SMS interceptor 162, SMS gateway 163, “and/or other servers or components” that are “operatively associated with communicator 150 and/or ad server 110,” which can be utilized to send and receive SMS and MMS messages “having embedded therein a content item served by ad server 110.” Ex-1009 ¶170. For instance, Levkovitz teaches that a sender’s mobile device sends a message to a recipient’s mobile device; the system may “intercept” and “modify the message, e.g., by adding, inserting, augmenting, appending or embedding into the message a content item stored in ad server 110”; and the modified message is sent to the recipient’s mobile device. *Id.*

118. Levkovitz further states that “a triggering event may occur in the” recipient’s mobile device such as “an incoming SMS message” being received, Ex-1009 ¶299, which causes an application such as a SMS viewer application to be automatically or manually opened or launched by the recipient’s mobile device “in response to the triggering event.” Ex-1009 ¶300. The recipient “may select to view the incoming SMS message,” Ex-1009 ¶301, and “the incoming SMS message may be presented” along with “a content item embedded within (e.g., an advertisement)” on the display of the recipient’s mobile device. Ex-1009 ¶302; *see also id.*, Fig. 13 (box 1370 depicting an exemplary screen-shot of the mobile device display with “the incoming SMS message, followed by a textual advertisement” with options for interaction). A POSITA would have understood that these advertisements transmitted to the mobile device would be visible to a user who could then click on them, which was standard practice for mobile ads in 2009 (as I explain in the technical background section of my Declaration (*see* Section VII.B, ¶¶36-38)). As such, the advertisements are content information that are related to a service (providing information about the things being advertised).

119. A POSITA would have been motivated to implement Levkovitz’s teachings of embedding advertisements in an incoming message into Still’s system to provide users customized advertisements based on their content request and allow them to control what advertisements they interact with. As Still discloses the

associating of ads with messages, a POSITA would have looked for more detail about how to do that associating and different ways to do so. Levkovitz provides that additional information and so would have been of interest to a POSITA.

120. A POSITA would have had a reasonable expectation of success in combining Still and Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations. In particular, both Still and Levkovitz describe general purpose computing systems and each have the capacity to run all kinds of software, including software applications. For example, common operating systems in commercially available mobile phones that I used by 2009 all had built in support for SMS messaging. *See, e.g.,* Ex-1033 (describing the “revolutionary” iPhone that “redefines what users can do on their mobile phones” including “mak[ing] calls by simply pointing at a name or number,” “go directly to those messages” that the user wants to listen to and “immediately randomly access those messages that interest them most,” “easily send and receive SMS messages in multiple sessions,” “easily choose a photo ... to include in an email”); Ex-1030 (Nokia 3250 User Guide); Ex-1040 (Nokia 9300 User Guide). They also all had connections to servers that a POSITA would have been familiar with. For example, contacts, applications, photos and messages could all be stored on device storage. Graphical user interfaces allowed users to interact with applications for making

phone calls, looking up contacts, sending messages, etc. And connections to servers were provided for browsing the web and sending messages among other things. These are all exemplified in the January 9, 2007 announcement of the Apple iPhone (Ex-1033) which includes a description of the camera and photo management application (which provided storage for photos and a graphical user interface), an SMS application, and a web browser, which a POSITA would understand worked by connecting to web servers. Furthermore, I recall during that demonstration of the phone at the time of the announcement that the web browser was shown connecting to the New York Times web server. As such, it would be well within the skill of a POSITA to implement the functionality of Levkovitz's advertising systems within Still's system.

**f. Element 1[e]: whereby the interactive multimodal message triggered on the mobile device enables said recipient interaction.**

121. In my opinion, Still alone or Still-Levkovitz teaches Element 1[e]. Still teaches an interactive multimodal message triggered on the mobile device (*see* Section XI.A.2.d, ¶¶103-109). *See, e.g.*, Ex-1008 ¶¶30 (recipient uses their mobile device “to click, tap, and/or otherwise enter the unique pairing identifier”), 31 (bubble server streams the message to the recipient). Moreover, Still teaches that the interactive multimodal message triggered on the mobile device enables recipient interaction. Still states that the recipient of the multimedia content “may call in and

listen to” or view the content by “pulling” it to their mobile device 110. Ex-1008 ¶26. The user may also “forward the content 106 to a friend,” i.e., push it to another recipient or “call in and dedicate the content 106 to a friend, i.e., a recipient, who may then receive” it. Ex-1008 ¶26. Thus, Still enables recipient interaction with the triggered interactive multimodal message in the same manner as the ’949 Patent, which discloses that “interaction” may include “forwarding the interactive multimodal message to one or more second recipients.” Ex-1001, 5:33-39.

**3. Dependent Claim 2: The method of claim 1, wherein the recipient triggers the interactive multimodal message using on[e] or more of dual-tone multi frequency dialogs, prompts in voice extensible markup language, automated speech recognition, and a hypertext transfer protocol post.**

122. In my opinion, Still alone or Still-Levkovitz teaches Claim 2.

123. (Ground 1) Still teaches that a recipient triggers an interactive multimodal message (*see* Section XI.A.2.d, ¶¶103-109). *See, e.g.*, Ex-1008 ¶¶30 (recipient uses their mobile device “to click, tap, and/or otherwise enter the unique pairing identifier”), 31 (bubble server streams the message to the recipient). Moreover, Still teaches that the recipient triggers the interactive multimodal message using one or more of dual-tone multi frequency (DTMF) dialogs and hypertext transfer protocol (HTTP) post. For example, Still states that that bubble server 102 (blue) communicates with communication network 104, content 106, telecommunication network 108, and mobile devices “using appropriate protocols,

such as the Hypertext Transfer Protocol (HTTP),” SMS, SVMS, GSM and CDMA. Ex-1008 ¶20. Still also teaches that the content “may be accessed by several methods, including ... the web or telephone devices.” Ex-1008 ¶21; *see also id.* ¶23 (“Access to the content ... may be provided by the web, i.e., the Internet, via **HTTP**, FTP, and/or **telephone services**.”). Still further discloses that a request received from the recipient would include the unique pairing code (such as “\*21”). *Id.* ¶28. And that the request could be sent using the mobile device “to click, tap, and/or otherwise enter the unique pairing identifier.” *Id.*, ¶30.

124. A POSITA would have recognized that triggering the content using HTTP by clicking on the identifier would constitute an “HTTP” request such as a POST or GET request because the recipient’s request sends data such as the unique pairing code “\*21” to the server that causes the server to create or update a resource. For example, the recipient’s HTTP request causes the server to add transmitted service information (e.g., advertisements) or update the message to include it when it is sent back to the recipient. A POSITA would further have understood that one way that a user would click data such as “\*21” would be on the mobile device’s standard keypad and that such clicking would result in that data being transmitted using the standard dual-tone multi frequency (DTMF) tones, which have been used to transmit keypresses over voice channels on telephones for decades. Additionally, a POSITA would have understood that entering the unique pairing identifier

manually on a telephonic keypad (as opposed to full alphanumeric) would have used DTMF tones (i.e., touch tones) to access the content, in the same way that voicemail can be accessed. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

125. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF.

126. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041. Whether it is DTMF, HTTP, SMS, or other standard communication technologies, these were all extremely well-known and implementing any of these standard technologies within the general purpose computing systems of Still would have been well within the ability of a POSITA.

**4. Dependent Claim 4: The method of claim 1, wherein the interactive multimodal message is triggered on activating a link in a text message on the mobile device by the recipient.**

127. In my opinion, Still alone or Still-Levkovitz teaches Claim 4.

128. (Ground 1) Still teaches an interactive multimodal message triggered on the mobile device (*see* Section XI.A.2.d, ¶¶103-109). *See, e.g.*, Ex-1008 ¶¶30 (recipient uses their mobile device “to click, tap, and/or otherwise enter the unique pairing identifier”), 31 (bubble server streams the message to the recipient). Moreover, Still teaches triggering the interactive multimodal message by activating a link in a text message on the recipient’s mobile device.

129. Still teaches that “a unique pairing identifier is assigned” by the bubble server, which enables “the recipient to receive the sender’s messages” and the bubble server “to receive a request” for the message from the recipient (204, blue). Ex-1008 ¶28, Fig. 2 (annotated). Moreover, “a notice is sent to the recipient,” which is “displayed on the recipient’s mobile device ... as an incoming notice” and includes the unique pairing identifier that was assigned to the sender’s message by the bubble server (206, pink). *Id.* ¶29. The notice includes text that advises “the recipient that a message from the sender is available for” streaming and may also describe the multimedia content such that it allows the recipient “to determine whether to request the multimedia content.” Ex-1008 ¶29. When the recipient uses their mobile device “to click, tap, and/or otherwise enter the unique pairing identifier,” the unique pairing identifier is sent to the bubble server (208, yellow) to trigger the content. Ex-1008 ¶30. The message content on the bubble server is then streamed to the recipient (210, yellow). Ex-1008 ¶31. A POSITA would have understood that Still’s disclosure of clicking or tapping the unique pairing identifier is a disclosure of clicking a link to trigger the content because clicking or tapping is how a user conventionally interacts with a link, as I explain in my technical background section (*see* Section VII.B, ¶¶36-38). More details on this feature are also provided in Still’s provisional application. *See, e.g.*, Ex-1044, 3 (“The user may record a message via a web interface and a microphone on their computer. The user may send a message

to the system and the message is recorded and stored. The system may send a notification to the recipient indicating that they have received a message from a sender. The recipient may click on a link within an SMS notification, which may dial into the system, and start a playback of the recorded message. The recipient may perform a number of actions on the message (delete, forward, etc.) and can also reply to a sender message.”), 6-7 (“In some embodiments, a pair of number links is used (the pair consists of numbers from Sender A and Recipient B). The first number link in the SMS may be the ‘listen’ code. The pairing of the listen code with the calling party MSISDN may bring the user directly to the specified message. (When MSISDN 4157649876 dials the MSISDN 3334576543, the pairing indicates that MSISDN 4157649876 is trying to receive message #2 in their list). ... The second number link the SMS may be the ‘reply’ code. The reply code is intended to be a fast an[d] easy mechanism for recipients to use their SMS box as a ‘proxy’ for a directory or ‘Bubble’ ADDRESS BOOK. ... For the ‘reply code’, one 10-digit MSISDN ‘reply code’ can be used for a pairing of people.”).

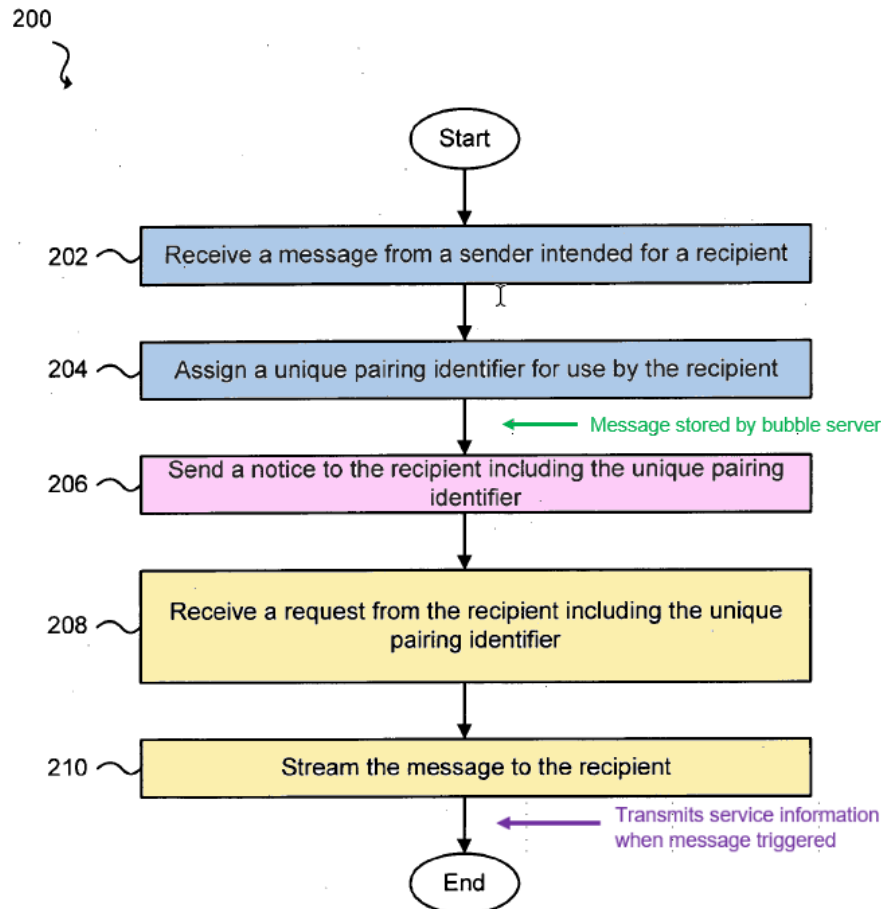


FIG. 2

130. I note that Still also teaches associating a “message identifier” with the message and sending the message identifier to the recipient. Ex-1008 ¶8. Still teaches “receiving a message intended for a recipient using a server, storing the message on the server, associating a message identifier with the message, the message identifier configured to distinguish the message from other messages intended for the recipient, and sending the message identifier to the recipient.” *Id.* “The method further includes streaming the message to the recipient each time the recipient requests the message, the request including the message identifier.” *Id.*; *see*

*also id.* at Fig. 4. Still states that “[t]he message identifier is not based on the sender, and may be configured to distinguish the message from other messages intended for the recipient” and “[t]he association of the message identifier with the message allows the recipient to request and stream the message each time the recipient requests the message via the message identifier.” *Id.* ¶42. Moreover, “[t]he message identifier may be in the form of a notice.” *Id.* ¶43. A POSITA would have found it obvious from Still’s disclosures that the recipient may send a request to the server for the multimedia message and/or content using their mobile device “to click, tap, and/or otherwise enter the” *message identifier* in the same way that the recipient sends a request to the server using the *unique pairing identifier*. *See, e.g.*, Ex-1008 ¶30. A POSITA would further have understood that triggering Still’s interactive multimodal message could be done by activating a link via the message identifier in a text message (by clicking, tapping, or entering it) for the same reasons discussed above for the unique pairing identifier because it is a link that directs to the interactive multimodal message. Therefore, a POSITA would have understood that the message identifier in Still could be used in place of the unique pairing identifier or in combination with it and meet this claim.

131. Still additionally states that the bubble server may communicate with the recipient’s mobile device “using appropriate protocols, such as” SMS or SVMS. Ex-1008 ¶20; *see also id.* ¶29 (“The notice may appear in an ‘inbox’ of the

recipient's mobile device 110. The notice may describe a multimedia content.”).

Thus, a POSITA would have understood that the “notice” with the unique pairing identifier (i.e., link) to the message may be sent to the recipient in the form of a text message. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

132. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A

POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF.

133. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041. As such, a POSITA would have understood that the notice with the linked unique pairing identifier could be sent as a text message in Still.

134. (Ground 2) Levkovitz also teaches triggering the interactive multimodal message on activating a link in a text message on the recipient’s mobile device. Levkovitz teaches that certain components of the system may “trigger” the recipient’s device “to transmit a content request” by sending a message “having a link or a shortcut which may trigger a content request by” the recipient’s device. Ex-1009 ¶175; *see also id.* ¶39 (“message” includes SMS messages). A recipient receives “an indication that an incoming commercial content item/advertisement/SMS/MMS/IM/Email message is received,” and the recipient can “press or click” on a soft-key to be provided user-selectable operations via an input unit. Ex-1009 ¶269. The user-selectable operations may include virtually

visiting, browsing, or redirecting the user to “a certain website (e.g., through a [URL] or other shortcut or pointer, which may be pre-provided with the content item).” *Id.*; *see also id.* ¶175 (“system 100 may send to device 170 a data item or a message, e.g., having a link or a shortcut which may trigger a content request by device 170”). A POSITA would have understood that the recipient triggers the interactive message when it activates the link or URL in the message (which may be a text message) by pressing or clicking it to access a content item. Levkovitz describes sending the links or URLs via a range of communication technologies and because one of them is SMS for messages, it would have been clear to a POSITA that one of the ways those links or URLs could have been sent would have been in an (SMS) text message. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), it was common by 2009 to be able to click on URL links within text messages as many mobile devices of that time included touch screens for interacting with text messages, web connectivity, and interactive web browsers.

135. A POSITA would have recognized that Levkovitz specifies additional details and features (such as to “press or click” a link) that could be implemented into the pointer/link taught by Still, and implemented these features into Still—to the extent it is not already included as part of Still’s unique pairing identifier and/or additional capabilities were necessary—to allow the system to more efficiently and quickly access a content request related to a specific message. Clicking on

Levkovitz's URL would be faster than entering the "\*21" keys in Still, and so a POSITA would have been motivated to implement a faster technique in Still.

136. A POSITA would have had a reasonable expectation of success in combining Still and Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations. Whether it is DTMF, HTTP, SMS, or other standard communication technologies, these were all extremely well-known and implementing any of these standard technologies within the general purpose computing systems of Still and Levkovitz would have been well within the ability of a POSITA.

**5. Dependent Claim 5: The method of claim 1, wherein said transmitted service information provides the recipient with one or more options, wherein the recipient selects one of said provided options.**

137. In my opinion, Still alone or Still-Levkovitz teaches Claim 5. Still alone or Still-Levkovitz teaches transmitted service information (*see* Section XI.A.2.e, ¶¶1130-120). *See, e.g.*, Ex-1008 ¶45 (multimedia content "may be associated with" the message that is sent to the recipient, such as, e.g., "content for ... advertising" that is "based on a demographic trait of the recipient, or the like"); Ex-1009 ¶302 ("the incoming SMS message may be presented" along with "a content item embedded within (e.g., an advertisement)" on the display of the recipient's mobile device).

138. (Ground 1) Still also teaches that the transmitted service information provides the recipient with one or more options, wherein the recipient selects one of the provided options. Still states that “multimedia content ... may be associated with” the message that is sent to the recipient, such as, e.g., “content for ... advertising” that is “based on a demographic trait of the recipient, or the like.” Ex-1008 ¶45. Still further states that the recipient may “forward the content” to a friend (i.e., another recipient) or “call in and dedicate” it to another recipient. Ex-1008 ¶26. A POSITA would have understood that these options provided to the recipient that the recipient selects from, would also be applicable to advertising content that may be associated with the message that is sent to the recipient (*id.* ¶45). Still does not distinguish between the user’s interaction capabilities with a multimedia content such as a message versus an advertisement. A POSITA would thus have understood that the recipient in Still may forward an advertisement to a friend (i.e., another recipient) or “call in and dedicate” it to another recipient. Given that advertising was a well-known and lucrative interactive service, a POSITA would have been interested in including this functionality in Still’s system, if not already implemented. Moreover, Still’s provisional application (Ex-1044, 3-4) provides additional details on the features of Still’s system. For example, Still’s provisional states that “[th]e recipient may perform a number of actions on the message (delete, forward, etc.) and can also reply to a sender message. ... In some embodiments, the

system creates a short (3-8 second) audio advertising spot at the beginning or end of the Message. The system may upload recorded content from advertising partners to help subsidize the cost of SMS notifications.” *Id.* at 3-4. Moreover, “a subscriber’s phone number may be entered via the web and used to verify the user” so that the “system may send a confirmation SMS to that phone number.” *Id.* at 4. “This ‘confirmation SMS’ may say something like ‘You have subscribed to Paris Hilton Messages.’ Click here (link) or reply to this message if you would like to be removed from the mailing list.”” *Id.* at 4-5. Thus, a POSITA would have further understood that Still’s recipient can reply to an advertisement message.

139. (Ground 2) Levkovitz teaches that the transmitted service information provides the recipient with one or more options, wherein the recipient selects one of the provided options. Levkovitz teaches that the recipient’s mobile device has a display unit for displaying at least one “user-selectable operations” that are “selectively associated with an advertisement embedded within an incoming message.” Ex-1009, Abstract. Moreover, Levkovitz states that the device may have “a soft-key or other user interface” for selecting an operation from at least one “user-selectable operations selectively associated with the advertisement embedded within the incoming message.” Ex-1009 ¶66. The selectable operations include, e.g., calling “a destination related to the advertisement” and “storing a coupon included in the advertisement” locally for later presentation. Ex-1009 ¶67.

140. Levkovitz also teaches that “a triggering event may occur in the” device such as “an incoming SMS message” being received. Ex-1009 ¶299. An application such as a SMS viewer application may be automatically or manually opened or launched by the recipient’s mobile device or the recipient, respectively, “in response to the triggering event.” Ex-1009 ¶300. The recipient “may select to view the incoming SMS message,” Ex-1009 ¶301, which “may be presented” along with “a content item embedded within (e.g., an advertisement)” on the display of the device. Ex-1009 ¶302.

141. Levkovitz’s Figure 13 depicts an exemplary device display that presents “the incoming SMS message, followed by a textual advertisement.” The display includes user-selectable “options” and “back” actions (1372, 1374), which may be “associated with two, respective, keys of soft-keys of the” mobile device. Ex-1009 ¶302. A box 1350, “the user may select the ‘options’ action” and at box 1360, in response, “a menu may be presented,” displaying at least one user-selectable option, “which may be associated with the content item (e.g., the advertisement) presented in box 1370.” Ex-1009 ¶303. Box 1380 depicts an exemplary screen-shot of the resulting device display, including a menu with two portions: “an upper portion showing selectable options related to the incoming SMS message (e.g., reply to the sender, forward the message, or delete the message), and a lower portion showing selectable options related to the content item (e.g., the

advertisement) of box 1370 (e.g., show a special offer related to the advertisement, show a map of a location related to the advertisement, call a store or cinema or another destination related to the advertisement, buy tickets or goods related to the advertisement, or the like).” Ex-1009 ¶303.

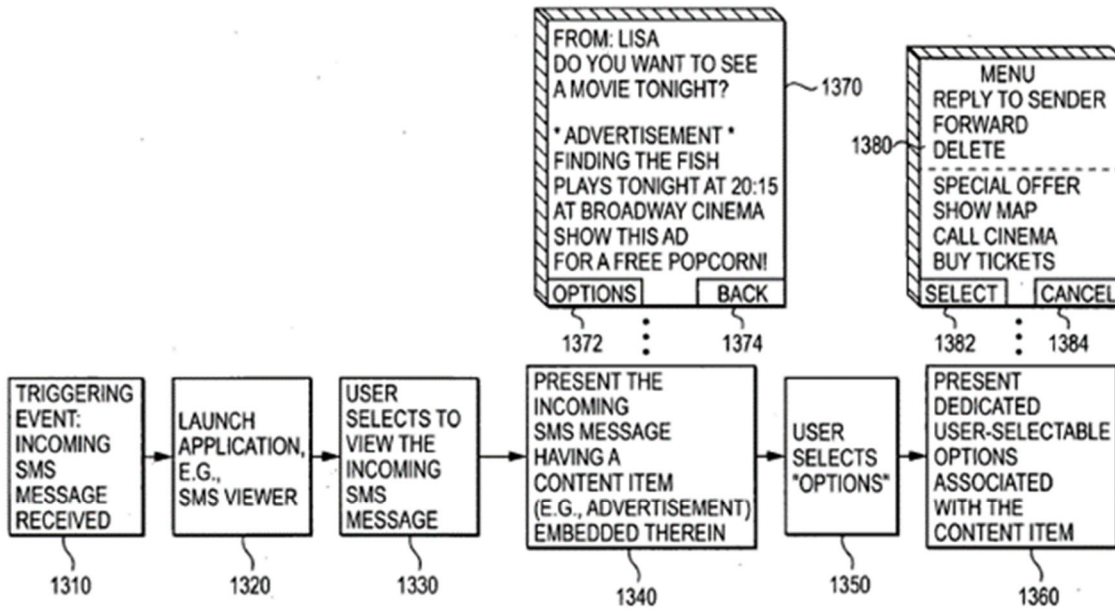


FIG. 13

142. A POSITA would have been motivated to implement Levkovitz’s teachings of embedding advertisements in an incoming message and providing user-selectable operations that enable the recipient to interact with the advertisements and/or multimodal messages into Still’s system to improve users’ interactive experiences by providing them customized advertisements based on their content request and allowing them to control what content they interact with by, e.g., storing a coupon or buying tickets or goods relating to an advertisement. Both Still and

Levkovitz teach transmitting advertisements to the recipient and interaction capabilities such as forwarding and replying to content. Ex-1008 ¶¶26, 45; Ex-1009, Fig. 13 (box 1380); *see also* Ex-1044, 3-5 (Still's recipient can reply to an advertisement message). Thus, a POSITA interested in additional details on user-selectable options for interacting with advertisements in Still's system would have looked to Levkovitz and implemented those options with Still's system. Being able to interact with advertisements, such as clicking on advertisement to follow a link to the advertiser, was extremely common and lucrative technology that a POSITA would have been familiar with. Ads typically generated more revenue when a user clicked on it, and this "click-through" rate was typically tracked and reported to advertisers. Thus, a POSITA would have been motivated to use such click-through advertising technology in Still to apply industry standard technology and to increase revenue. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to "click through" to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

143. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF.

144. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041. As such, a POSITA would have understood that the notice with the linked unique pairing identifier could be sent as a text message in Still.

145. A POSITA would have had a reasonable expectation of success in combining Still and Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations. In particular, supporting “click-through” advertisements or other forms of interactive experiences used standard technology which would have been well within the skill of a POSITA to implement using the general purpose computer systems disclosed by Still and Levkovitz.

**6. Dependent Claim 9: The method of claim 1, further comprising the step of forwarding the interactive multimodal message to a plurality of second recipients simultaneously.**

146. In my opinion, Still alone or Still-Levkovitz teaches Claim 9.

147. (Ground 1) Still teaches an interactive multimodal message (*see* Section XI.A.2.a, ¶¶74-75). *See, e.g.*, Ex-1008 ¶¶45 (multimedia content may include “music, electronic books, and other forms of audio entertainment content, as well as video content, voice messages, animation content, or other forms of content for communication, advertising, entertainment, etc.”), 54 (I/O interface, “may be any device that can receive input for controlling and accessing the bubble server” and “couple to a keyboard, touchscreen, mouse, keypad, ... or any other input or output device.”). Moreover, Still teaches forwarding the interactive multimodal message to another recipient. Still teaches that the mobile device can “forward a multimedia content to a recipient.” Ex-1008 ¶22. Moreover, Still states that the recipient may

“forward the content ... to a friend.” Ex-1008 ¶26. Still further explains that “[t]he content ... may be one or more forms of messages” and “may include a SMS and/or SVMS message, multimedia content, including” for example, voice messages “and so forth.” *Id.* ¶21. Still’s provisional provides additional details regarding these features of Still. *See, e.g.*, Ex-1044, 3 (“The user may record a message via a web interface and a microphone on their computer. The user may send a message to the system and the message is recorded and stored. The system may send a notification to the recipient indicating that they have received a message from a sender. The recipient may click on a link within an SMS notification, which may dial into the system, and start a playback of the recorded message. ***The recipient may perform a number of actions on the message (delete, forward, etc.) and can also reply to a sender message.***”).

148. A POSITA would have understood that as an obvious design choice the message could be forwarded to a plurality of other (i.e., second) recipients simultaneously. For example, Still already teaches that the “sender may create a notice describing a content” and send it “to one ***or more*** recipients” and that the multimedia content may be streamed to recipients “on a subscription basis.” Ex-1008 ¶¶30, 32. A POSITA would have understood that a system that streams content to subscribers would have been able to stream content simultaneously to a plurality of subscribers, because, group text messages could be forwarded by one recipient to

a plurality of other recipients simultaneously. *See, e.g.*, Ex-1038, 97 (RealPlayer’s “Multicast[:] Used for broadcasting large events over the Internet. Allows many computers to play the single stream simultaneously.”); Ex-1040, 26 (Nokia 9300 User Guide: “To forward a message, Press Menu, and Select Write → Forward.”), 41 (“With contact groups you can send the same message to a group of people at the same time.”), 90 (“Shift+Ctrl+G” is a shortcut for “Forward”); Ex-1030, 33 (Nokia 3250 User Guide: “You can create, send, receive, view, edit, and organize text messages, multimedia messages, e-mail messages, presentations, and documents. You can also ... receive and forward picture messages.”), 47 (“You can create groups, which allow you to send text messages or e-mail to many recipients at the same time.”). This was a standard technology, commonly implemented when a user could enter multiple recipients in a message.

149. For example, a POSITA would have understood that a well-known way to forward a message to multiple recipients was to list the multiple recipient addresses or phone numbers in the message and then press “send” (or equivalent), which would result in the message being sent to all listed recipients simultaneously. As I explain in my technical background section (*see* Section VII.A, ¶¶33-35), the earliest of computing systems supported electronic communications through various techniques including email and chat, then later (but still before the time the ’949 Patent) social networks. All of these supported various techniques to decide who to

address the communications to. It never made sense to ask a human user to remember the address of all possible recipients, and so it is no surprise that various recipient addressing techniques were developed early on. For example, I remember using email clients such as “Pine” back in the 1990s that had a built-in address book where I could enter the names and email address of recipients, and then use them to easily select who to send emails to. And by 1999, as shown in the screenshot below (Ex-1032), commercial services, such as AOL Instant Messenger (AIM) provided “buddy lists”, which were a form of an address book of online friends to direct short messages to.

Declaration of Dr. Benjamin B. Bederson  
U.S. Patent No. 7,929,949

**AOL.COM** Register and start using AOL Instant Messenger (SM) today!

**AOL Instant Messenger** **ALL NEW 3.0**

- **FREE!**
- **Fast Sign Up**
- **Stay on Top of the News**
- **Watch Your Stocks**

**New Users Click Here** **Upgrade** Click here for the latest version of the software.

Sign up now and start using AOL Instant Messenger! Just click above to get your screen name, then download the latest version. It's that easy.

- Send private instant messages in real time
- Chat with multiple people
- New FTP allows you to send and receive files
- Keep track of online friends with your Buddy List (tm)

**Now you can chat instantly with the people you want--It's hassle-free no matter how you are connected to the Internet!**

**Online Friend - Instant Message**

File Edit View People

AOLBuddy: Hey Chris! I'm trying out the ALL NEW AOL Instant Messenger Service!

OnlineFriend: Hi Ray - WOW! This is easy! How did you know I was online?

Your name appeared on my personalized Buddy List Window.

Warn Block Add Buddy Info Send

**Buddies** File People Favorites

**CHAT ON THE WEB FOR FREE**

Online List Setup

**Buddies (1/4)**

OnlineFriend

**Family (0/7)**

**Co-Workers (0/8)**

Search the Web Go

**AOL today!**

**AOL.COM** Register and start using AOL Instant Messenger (SM) today!

Copyright © 1999 America Online, Inc.  
All rights reserved. [Legal Notices](#)

150. Similarly, cell phones commonly had contact lists or address books built in that were available for users to select recipients from in order to send short text messages. For example, as shown in a user guide (Ex-1030, 34) from the Nokia 3250 mobile phone from 2005, it let users select recipients or groups from the built-in “Contacts” program in order to send short text messages.

M e s s a g i n g

■ Write and send messages

The wireless network may limit the size of MMS messages. If the inserted picture exceeds this limit, the device may make it smaller so that it can be sent by MMS.

Your device supports the sending of text messages beyond the character limit for a single message. Longer messages are sent as a series of two or more messages. Your service provider may charge accordingly. Characters that use accents or other marks, and characters from some language options like Chinese, take up more space limiting the number of characters that can be sent in a single message.

Before you can send and receive an SMS message, a multimedia message, or an e-mail, or connect to your remote mailbox, you must have the correct connection settings in place. See "Messaging settings," p. 41.

1. To create a message, select **Menu** > **Messag.** > **New message** and from the following options:

**Text message** — to create a text message

**Multimedia message** — to create a multimedia message (MMS)

**E-mail** — to create an e-mail message. If you have not set up your e-mail account, you are asked if you want to do so.

2. Press the joystick to select the recipients or groups from **Contacts** or enter the phone number or e-mail address of the recipient in the **To** field. To add a semicolon (;) to separate each recipient, press \*.

151. Many of these systems supported sending a message to a group of people simultaneously including at least email and text messaging. For example, documentation for the Pine email system I used in the 1990s had information about sending messages to multiple recipients. Ex-1039. Similarly, it was also common practice to be able to send text messages to multiple recipients. For example, the user manual for the Nokia 9300 mobile phone available in 2005 explained this (Ex-1040, 31):

M e s s a g i n g

Press **Write message**, select **Text message**, and press **OK**.

To write a new text message, press **Recipient** to select the recipients of the message, or enter the recipients' GSM phone numbers in the **To:** field. If you enter more than one number, separate the numbers with a semicolon or by pressing the Enter key after each number. Write the message, and press **Send**. You can see the number of characters that are left in the character counter. Note that a text message can only contain unformatted text.

152. Similarly, standard and well-known email technology supported simultaneous sending of messages to multiple participants. That was operated in a similar way as messages in that a user could enter multiple email recipients while composing an email, and when the email was sent by pressing a “send” button, the email would be transmitted to all of those recipients simultaneously. It was also well-known to forward numerous other kinds of documents. For example, a 2006 document from Cisco Systems describing shared services in the federal government listed “voicemail forwarding” as an example of features increase the ease of interagency collaboration via IP telephony.<sup>22</sup> Ex-1042, 1. Similarly, a 2005 Sony Ericsson manual for the Z520a mobile phone described that phone as having the capability to forward additional content such as ringtones.<sup>23</sup> Ex-1028, 2. A POSITA would thus have known how to implement this capability as a routine design choice to enable addressing multiple recipients at once. Doing so would require nothing more than routine software components because the concept of sending a message to multiple recipients simultaneously was well-known, and Still uses general

---

<sup>22</sup> Cisco Systems, Shared Services: What, Why, and Where to Begin (2006), available at: [https://www.cisco.com/web/strategy/docs/gov/SharedServices\\_Jan06.pdf](https://www.cisco.com/web/strategy/docs/gov/SharedServices_Jan06.pdf) (Ex-1042).

<sup>23</sup> Sony Ericsson Z520a Manual (2005), available at: <https://theinformr.com/downloads/phones/manuals/sony-ericsson-z520a-manual.pdf> (Ex-1028).

purpose computers, such that implementing this teaching within Still's system would have been well within the skill of a POSITA.

**B. Grounds 3-4: Claims 1-2, 4-5, and 9 are rendered obvious by Mumick'046 alone or Mumick'046 in view of Levkovitz**

**1. A POSITA would have been motivated to combine Mumick'046 and Levkovitz and had a reasonable expectation of success**

153. In addition to the reasons set forth below, a POSITA would have been motivated to combine the teachings of Mumick'046 and Levkovitz ("Mumick'046-Levkovitz") and would have had a reasonable expectation of success in doing so because each relates to the same well-known technologies.

154. Both relate to and describe methods for delivery of multimedia content using SMS messages that include a notification sent to a recipient that includes a pointer, which links to the multimodal message stored on a server. Ex-1009 ¶¶170, 175; Ex-1010, Abstract, ¶27. Mumick'046 discloses methods of combining speech with text "to create a multimodal SMS service," wherein a user is provided a link within each message a link that allows for the user the to retrieve or add "a voice message associated with an SMS text message." Ex-1010, Abstract. The user in Mumick'046's system "creates a voice message by" recording using a server and the voice recording is stored on the server. Ex-1010 ¶24. A text message is transmitted to the receiving user, "notifying them that a voice message has been recorded and providing a link," "which can be activated to listen to the message." Ex-1010 ¶24.

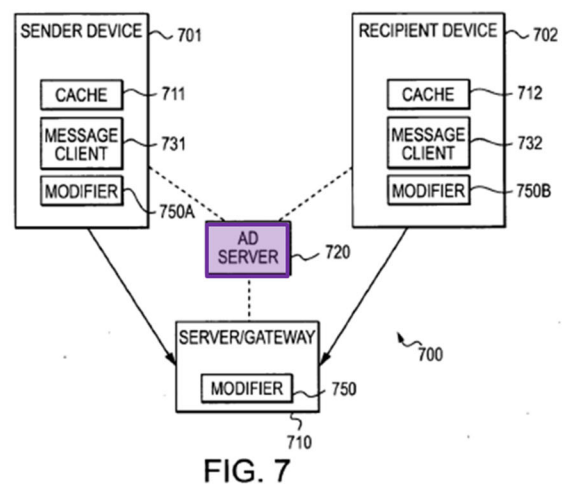
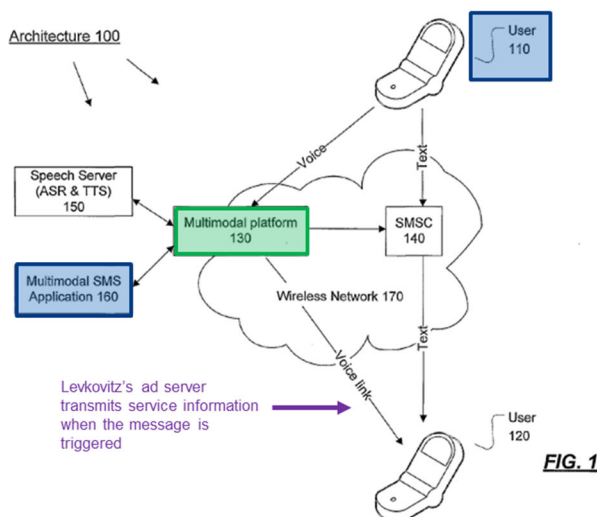
Mumick046's recipient may interact with the message by replying to a voice message by SMS. Ex-1010 ¶55. Similarly, Levkovitz discloses methods for sending and receiving SMS and MMS messages using a message client on the sender's device, Ex-1009 ¶240, wherein the messages have "have embedded therein a content item" such as an advertisement. Ex-1009 ¶170. Moreover, Levkovitz discloses that certain system components "may remotely, directly or indirectly trigger" the recipient's device "to transmit a content request" by sending a message that includes "a link or a shortcut which may trigger a content request by" the recipient's device. Ex-1009 ¶175. For example, Levkovitz discloses that a recipient "user may receive an indication that an incoming commercial content item" (or message) is received, in which case, the user can "press or click" on a soft-key to trigger a content request and be provided user-selectable operations via an input unit that are associated with the message or the "content item embedded therein" (e.g., advertisement). Ex-1009 ¶269. The operations may include virtually visiting, browsing, or redirecting the user to "a certain website (e.g., through a [URL] or other shortcut or pointer, which may be pre-provided with the content item)." *Id.* Levkovitz further states that its messages may include a SMS message, a MMS message, an IM message, and an Email message. Ex-1009 ¶39. Additionally, the advertisement content embedded into a SMS or MMS or IM or Email may include a "textual message, audio clip, video clip, image or the like." *Id.* ¶171; *see also id.* ¶265 ("Presented content items may include,

for example, textual content items, animated content items, visual or graphical content items, images, photos, video content, sound or audio content, or a combination thereof.”). These are the same types of messages and mediums disclosed by Mumick’046’s system.

155. A POSITA would have been motivated to implement Levkovitz’s teachings of embedding advertisements in an incoming message and providing user-selectable operations that enable the recipient to interact with the advertisements and/or multimodal messages, using Levkovitz’s ad server (Fig. 7 (purple)) with Mumick’046’s system (Fig. 1 (purple)). Mumick’046 describes how SMS can be used to inter-work with instant messaging so that “[i]f an IM is sent to a mobile device, it is delivered as a SMS” and the recipient “then responds with SMS.” Ex-1010 ¶60. Given that Mumick’046 already describes interactive message based services, a POSITA would have looked to Levkovitz as a specific example of an interactive service to combine with Mumick’046. Levkovitz discloses that “text analysis” of text messages can be used “to selectively target advertisements to” the user such that if they receive or send a text message having the keyword “football” then “the system may modify” the text message “by selectively inserting or adding an advertisement related to that keyword.” Ex-1009 ¶222. Moreover, Levkovitz allows a user to interact with advertisements and/or multimedia messages by, e.g., deleting, selecting, forwarding, and replying to content (if the content is messages)

and storing a coupon or buying tickets or goods (if the content is an advertisement).

Ex-1009 ¶¶67, 303. Thus, a POSITA would have known that implementing Levkovitz's teachings to embed an advertisement into an incoming message and provide user-selectable options for user interaction with Mumick'046's system would result in a more customizable and user-friendly system, with targeted advertisements for users. Given that advertising was a well-known and lucrative interactive service, a POSITA would have been interested in including this functionality in Mumick'046's system and would have looked to Levkovitz as a specific example of customized advertising techniques to combine with Mumick'046.



156. A POSITA would have been motivated to combine Mumick'046 and Levkovitz because they would have recognized a benefit of incorporating Levkovitz's teachings of embedding advertisements in an incoming message and

providing user-selectable operations that enable the recipient to interact with the advertisements (and/or multimodal messages) into a system like Mumick'046. The combined system would improve the user's interactive experience by providing users customized advertisements based on their content request and allow them to control what advertisements they interact with by, e.g., deleting, selecting, forwarding, and replying to content (if the content is messages) and storing a coupon or buying tickets or goods (if the content is an advertisement). Ex-1009 ¶¶67, 303. A POSITA would have additionally been motivated to combine Mumick'046 and Levkovitz because a purpose of Levkovitz's system is to defray the cost of the messaging service. For example, Levkovitz explains that "the appended content item may be an selected advertisement which may be added to a user-created SMS or MMS or IM or Email, for example, thereby reducing the cost or price that the sending user and/or the receiving user are required to pay to their service provider(s) in order to send or receive the SMS or MMS or IM or Email message." Ex-1009 ¶170. A POSITA would have recognized a benefit in defraying costs of the messaging service, as Levkovitz discloses, and would have been motivated to combine Levkovitz with Mumick'046 to achieve those benefits in Mumick'046's system. As such, in the combined Mumick'046-Levkovitz system, the embedded advertisements in the messages sent to the recipient would "reduc[e] the cost or price

that the sending user and/or the receiving user are required to pay to their service provider(s) in order to send or receive the SMS or MMS or IM or Email message.”

157. A POSITA would also have had a reasonable expectation of success in combining the teachings of Mumick’046-Levkovitz. Mumick’046 and Levkovitz both disclose methods for enabling recipient interaction through the delivery of multimodal messages using familiar elements such as mobile devices, SMS messaging, and servers that a POSITA would have understood are amenable to various well-understood and predictable combinations, as I explain in further detail below. For example, common operating systems in commercially available mobile phones that I used by 2009 all had built in support for SMS messaging. See, e.g., Ex-1033 (describing the “revolutionary” iPhone that “redefines what users can do on their mobile phones” including “mak[ing] calls by simply pointing at a name or number,” “go directly to those messages” that the user wants to listen to and “immediately randomly access those messages that interest them most,” “easily send and receive SMS messages in multiple sessions,” “easily choose a photo ... to include in an email”); Ex-1030 (Nokia 3250 User Guide); Ex-1040 (Nokia 9300 User Guide). They also all had connections to servers that a POSITA would have been familiar with. For example, contacts, applications, photos and messages could all be stored on device storage. Graphical user interfaces allowed users to interact with applications for making phone calls, looking up contacts, sending messages,

etc. And connections to servers were provided for browsing the web and sending messages among other things. These are all exemplified in the January 9, 2007 announcement of the Apple iPhone (Ex-1033) which includes a description of the camera and photo management application (which provided storage for photos and a graphical user interface), an SMS application, and a web browser, which a POSITA would understand worked by connecting to web servers. Furthermore, I recall during that demonstration of the phone at the time of the announcement that the web browser was shown connecting to the New York Times web server. As such, it would have been well within the skill of a POSITA to implement Levkovitz's embedded/customized advertisements and user-selectable operations into Munick'046's system. Ex-1009 ¶170; Ex-1010, ¶27.

## **2. Independent Claim 1**

- a. Element 1[pre]: A method of enabling a recipient to interact with an interactive multimodal message triggered on a mobile device of said recipient, comprising the steps of:**

158. In my opinion, Mumick'046 alone or Mumick'046-Levkovitz teaches Claim 1's preamble to the extent it is limiting. Mumick'046 teaches an interactive multimodal message triggered on a recipient's mobile device. Mumick'046 states that the user "creates a voice message by directly calling the multimodal platform" or "replying to a previous multimodal SMS or text SMS[]" and "following the provided multimodal SMS prompts to create a voice recording." Ex-1010 ¶24. After

the voice “recording is completed and stored” at multimodal platform 130 (green), a text message is transmitted to the recipient, “notifying them that a voice message has been recorded and providing a link, which can be activated to listen to the message.” Ex-1010 ¶24.

159. Moreover, Mumick’046 discloses sending and receiving MMS messages that include “text, voice, and image.” Ex-1010 ¶59; *see also id.* ¶¶9 (disclosing a “multimodal SMS mechanism combining speech,” image or video data “with standard text SMS”), 57 (“Further embodiments of the invention provide for the inter-working of multimodal SMS with multimedia message services (MMS) and allow the conversion of MMS to multimodal SMS and the use of multimodal SMS to send MMS messages to MMS users.”), 58 (“If a multimodal SMS user desires to send an MMS message (e.g., to a user who prefers to receive MMS messages rather than SMS messages) the multimodal platform 130 is notified and conversion to MMS is carried out transparently to the user by the platform. The multimodal platform 130 constructs a MMS message using the defined standards for MMS by combining any text portion, or other media material, *into a single MMS construct* which is then sent to the desired recipient.”). Mumick’046 additionally teaches that its system includes “user input and/or output devices including those capable of pickup and playback of speech and those capable of entering and displaying text information.” Ex-1010 ¶¶26, 27 (“The text input device is used to

compose a message to be sent using standard SMS technology.”). A POSITA would have understood that Mumick’046’s messages with multimedia content are interactive multimodal messages because they comprise a seamless combination of graphics, text, and audio output or a combination of the same with speech, text, and touch input. A POSITA would have understood that “seamless” in this context means at least that the graphics text and audio output or speech, text, and touch input (or combination thereof) are part of the same interactive message sent to the recipient, and not sent separate separately. In particular, Mumick’046 discloses messages that include “image and video messages,” which are graphics and speech (Ex-1010 Abstract, ¶¶9, 59), the text SMS message sent to the recipient is text (*id.* ¶24), and the user input and output devices are touch input and audio output, respectively (*id.* ¶¶26-27). For example, a POSITA would have understood that Mumick’046’s messages seamlessly combine speech, text, and touch input such as when a text message that is inputted by the user on the input device includes a link to a voice message (speech) because Mumick’046 states that it combines “any text portion, or other media material, *into a single MMS construct* which is then sent to the desired recipient.” Ex-1010 ¶58. A POSITA would also have understood for the same reason that Mumick’046’s messages seamlessly combine graphics, text, and audio output such as when a text message is sent with “image and video” (graphics)

that is outputted audibly and visually to the recipient on their output device (audio output). *Id.*

160. Mumick’046 also teaches enabling a recipient to interact with the triggered interactive multimodal message. Mumick’046 discloses that the recipient may “reply to a voice mail by SMS.” Ex-1010 ¶55. This is consistent with how the ’949 Patent enables recipient interaction. *See* Ex-1001, 5:34-39 (examples of recipient “interaction” include the recipient “replying to the interactive multimodal message”).

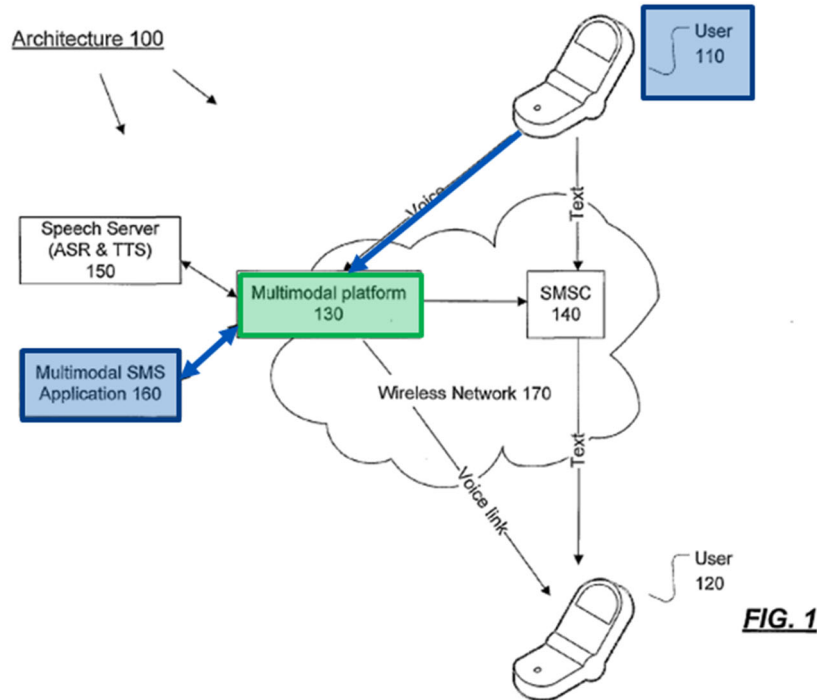
**b. Element 1[a]: creating said interactive multimodal message by a sender using a client application available to said sender, wherein said created interactive multimodal message is stored at a server;**

161. In my opinion, Mumick’046 alone or Mumick’946-Levkovitz teaches Element 1[a].

162. (Ground 3) Mumick’046 teaches an interactive multimodal message (i.e., text and multimedia content) (*see* Section XI.B.2.a, ¶¶158-160). *See, e.g.*, Ex-1010 ¶¶16 (“[A] multimodal SMS is created by a user device, transmitted through the network, and received by a second user device.”), 26 (system includes audio output and touch input capabilities), 58 (The multimodal platform 130 constructs a MMS message ... by combining any text portion, or other media material, into a single MMS construct which is then sent to the desired recipient.”), 59 (describing sending and receiving MMS messages that include “text, voice, and image”).

Mumick'046 further teaches creating the interactive multimodal message using a client application available to the sender.

163. First, the sender creates an interactive multimodal message by using their “text input device ... to compose a message to be sent using standard SMS technology.” Ex-1010 ¶27, Fig. 1 (blue). The user “creates a voice message” by calling the multimodal platform directly from their device or replying to a previous multimodal or text SMS and following prompts “to create a voice recording.” Ex-1010 ¶24; *see also id.* ¶37 (the user can “click[] on the phone number ... to retrieve the voice message” and while retrieving it, can “reply by voice, thereby continuing an exchange of voice messages”). In particular, Mumick'046's multimodal SMS application 160 (blue) “combines the text message ... with a link to a spoken message” utilizing “a message identifier.” Ex-1010 ¶27. The “combined message” is transmitted to the recipient (pink) who may then “read the text message and retrieve, from” multimodal SMS application 160, “the associated voice message through the message identifier” (yellow), as I discuss below. Ex-1010 ¶27.



164. A POSITA would have understood that Mumick'046's text input device on the sender's mobile device, which in turn, accesses the underlying functionality and software of the multimodal SMS application via a voice connection (or clicking a link) is a program present on or accessible by the sender's mobile device that is used by a sender to create a message, such as an SMS messaging application with voice connection capabilities. This basic client-server architecture along with the design choice of how to structure which components are placed at which location in the system has been known for decades, as I discuss in my technical background section. (See Section VII.C, ¶¶39-40).

165. Computer systems have been architected for decades with a wide range of structures. Historically, computers were big and expensive and they provided

“time shared” access to multiple terminals. Sometimes those terminals (a.k.a. “clients”) were “dumb” or “thin”, and provided primarily input and output capabilities while most of the computation was provided at the “server”. Other times, those clients had greater computation capability, and in the early 1980s with the introduction of “personal computers”, those clients (while still often connected to servers) had sufficient computational capabilities to run independently.

166. Back in 1992, client-server computing was significant enough that it was described in an article in Communications of the ACM – the broad interest magazine of the main professional international computer society. That article characterized some of the key elements of client-server computing, including that the client typically communicates with the server, transmitting queries or commands, performs data analysis on query or command results from the server and presents the Graphical User Interface (GUI). On the other side, servers typically provide a service to the client, responding to the queries or commands – and do so in a way that hides much of the details of its implementation so that clients with various kinds of software and hardware can work with it. This article also explains that as far back as 1992, it was common to have the GUI of an application displayed on a computer remote from the application. It describes the X Window System that commonly ran on Unix environments which “provides network transparency so that an application

displaying a chart on a screen could be running on a local machine or a remote machine thousands of miles away.” Ex-1025, 91.

167. As illustrated in Figure 1, Mumick’046’s multimodal SMS application 160 (blue) “combines the text message ... with a link to a spoken message” utilizing “a message identifier.” Ex-1010 ¶27. The “combined message” is transmitted to the recipient (pink) who may then “read the text message and retrieve, from” multimodal SMS application 160, “the associated voice message through the message identifier” (yellow). *Id.* For example, the user may “simply activate (‘click’) the link,” e.g., message identifier, “to access their message.” *Id.* ¶35; *see also id.* ¶55 (“The user receives the message and clicks on the multimodal SMS link to hear the VM.”). A POSITA would have understood that the client application on the sender’s mobile device (i.e., text input device that is used to compose the SMS text message) communicates with the network server-based multimodal SMS application that accesses other network components. *See id.* ¶¶26, 36, Fig. 1 (multimodal SMS application is an application connected to other network components such as speech server 150 for recording and playing back voice messages, multimodal platform 130 for storing and retrieving all messages, and SMSC 140 for transmitting messages via wireless network 170 to the recipient). A POSITA would have recognized that a portion of the application necessary to create the interactive multimodal message—combining the user’s text message with a link to a recorded voice message using a

message identifier and sending a notification to the recipient that includes the message identifier (or link) so that the recipient can access the message—resides on the multimodal SMS application and is “available to said sender.”

168. In sum, Mumick’046 teaches “using a client application available to said sender,” that includes a client application on the sender’s device for composing a new text message and communicating with a network-based multimodal SMS application, available to the sender, to add voice content, interact with the sender’s device to combine the user’s text message with a link to a recorded voice message using a message identifier, and notify the recipient of an awaiting message that the recipient can retrieve through the message identifier.

169. A POSITA would have understood that Mumick’046’s text input device in combination with the multimodal SMS application 160 are used by the sender to create a message in the same way that the ’949 Patent contemplates—via a voice SMS application provided over a voice connection. For example, the ’949 Patent states that the client application may be “provided as a functionality in a compose function available in a ... voice SMS[] application provided over a voice connection.” Ex-1001, 3:56-59. This is how Mumick’046’s multimodal SMS application 160 works—it combines the voice message created using the speech server over a voice connection and stored on the multimodal platform, with a text message created by the user using their input device (i.e., mobile device). Ex-1010

¶¶26-27. In particular, Mumick’046 discloses that it functions with a “multimodal SMS application.” “An initiating user 110 creates a message by calling an assigned network number for the multimodal platform 130. The multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g. by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.” Ex-1010 ¶37; *see also* Ex-1010 ¶¶26-27, 39, 42-43. That is, a person operating the multimodal SMS application on Mumick’046’s mobile device would access the functional server through SMS.

170. Although unnecessary in view of the construction of “client application available to said sender” discussed above (*see* Section IX.C, ¶¶56-58), a POSITA would also have understood that the details of which application components are put on the client, versus put on the server and accessed by the client, would have been a matter of routine design choice to a POSITA. *See, e.g.*, Section VII.C, ¶¶39-46. For example, a POSITA would have understood that there may be certain parts of the application that are on the client and certain parts that are executed by the device, but which access additional functionality on a web server application as needed, depending on how the system is architected. Whichever portion is put on the client would constitute a client application. As another example, a client application entirely on the sender’s device could do all the creating of the interactive multimodal message and access content locally on the sender device—such as photographs or

audio recordings—and assign message identifiers itself, and then communicate the entire interactive multimodal message to the multimodal SMS application, which would then forward it to recipients using standard protocols. *See, e.g.*, Ex-1010 ¶25 (“It should be noted that the link embedded in an SMS message can be created at the receiving device.”). A POSITA would have been motivated to architect the system this way, if they desired, because it would have enabled the user to create an interactive multimodal message even in areas of limited network activity, for example, “without dependence on operational status or location of the device,” as taught by Levkovitz and I explain in more detail below. Ex-1009 ¶262.

171. Finally, as claim element 1[a] requires, Mumick’046 also “teaches wherein said created interactive multimodal message is stored at a server.” Mumick’046 states that “an automatic and unique identification of each message is *stored at the multimodal platform.*” Ex-1010 ¶11; *see also id.* ¶24 (“the recording is completed and stored at the multimodal platform 130”).

172. (Ground 4) Levkovitz teaches creating an interactive multimodal message by a sender using a client application that is available on the sender’s mobile device for the same reasons I discuss in Ground 2 (*see* Section XI.A.2.b, ¶88). Levkovitz states with Figure 7 that “sender device 701 may include *a message client 731*” (blue), which may incorporate, e.g., a software component and/or hardware component that is “able to send and/or receive a message, a textual

message, a graphical message, a SMS message, a MMS message, an IM item,” an Email message, “or the like.” Ex-1009 ¶240, Fig. 7 (annotated). Levkovitz also states that message client 731 “may be installed in device 701.” *Id.* ¶241. Moreover, Levkovitz states that message client 731 can be employed “as a SMS/MMS/IM/Email application” that is “able to send messages, receive messages, compose or edit outgoing messages intended for transmission, present or view or playback incoming message[s], delete previous messages, or the like.” *Id.* ¶240. Messaging client 731 may also retrieve “one or more content items or advertisements” using ad server 720 (purple) and/or local cache 711. *Id.* Levkovitz additionally discloses that message client 731 (732) “may be a wrapper application, a plug-in, an add-on, an envelope, or a front-end to a pre-programmed or pre-provided client application of device 701 (702).” Ex-1009 ¶241.

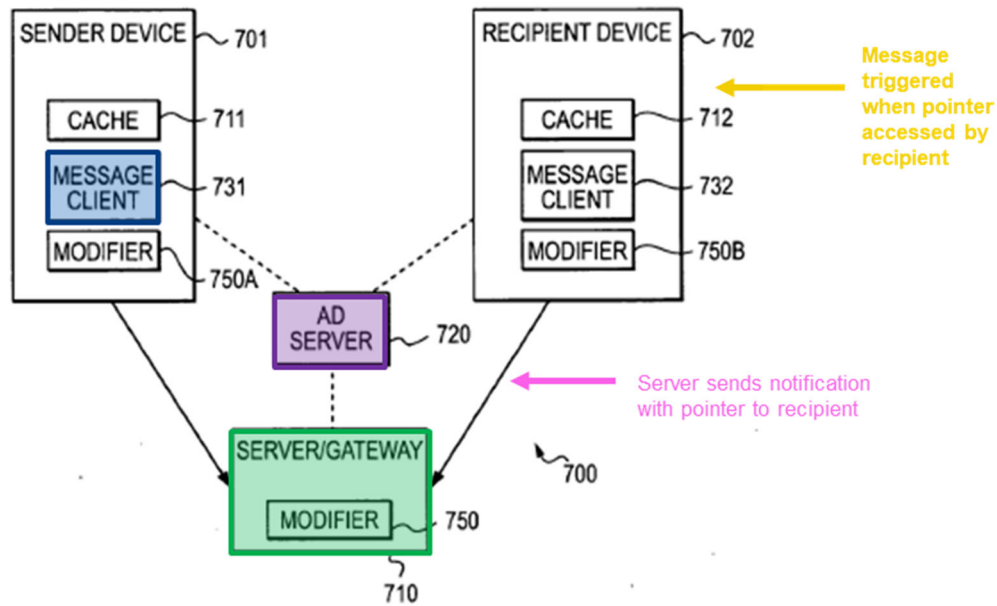


FIG. 7

173. A POSITA would have been motivated to implement Levkovitz's teachings of a client application located at the mobile device (instead of partially on a server accessible by the mobile device's application) into Mumick'046's system, to the extent it is not already implemented as such in Mumick'046. One motivation for doing so would be to have more functionality on the client mobile device such as the ability for a user to create messages in areas of limited connectivity. Levkovitz's client application allows "the user to selectively browse and/or view ... one or more content items that are stored" in a content repository using a content item browser on the device. Ex-1009 ¶262. The content item browser operates when the device "is online and/or ... offline," which "allow[s the] user to selectively browse and/or view stored content items without dependence on the operational

status or location” of the device. *Id.* A POSITA would have recognized the importance of this benefit to users and been motivated to implement this functionality with Mumick’046’s system. The combined system would allow the user to browse for content items and create interactive multimodal messages regardless of whether they are online, which would improve the user’s experience and save the user time, as the user would not have to wait to create a message until they were in a situation where their device could connect to a server. That would save them from having to remember the content they wanted to add to a message at a later time (as well as remembering to send the message in the first place). Since the loss of operation due to lack of service may well be out of the user’s control, being able to send a message when it was the user’s choice of when to do so would let them maintain control of the situation which would avoid potential frustration. Situations where users are not in control of their experience is in tension with Shneiderman’s Seventh Golden Rule – supporting internal locus of control. In particular, if a user can not initiate the message when they want to, but instead have to respond to the availability of the network, that is a conflict with this “golden rule.” Shneiderman is a very well-known expert in user experience and these “golden rules” are well-known throughout the field through his widely used multiple editions of the textbook “Designing User Interfaces” (Ex-1045) that they have been in for decades.

*Support internal locus of control.* Experienced operators strongly desire the sense that they are in charge of the interface and that the interface responds to their actions. Surprising interface actions, tedious sequences of data entries, inability to obtain or difficulty in obtaining necessary information, and inability to produce the action desired all build anxiety and dissatisfaction. Gaines (1981) captured part of this principle with his rule *avoid acausality* and his encouragement to make users the *initiators* of actions rather than the *responders* to actions.

Ex-1045, 75. This would have been an important benefit for the user as many existing systems that allowed the user to browse for content were only operational when the user was online.

174. Another motivation would be to provide the user improved targeting of content such as advertisements. Levkovitz states that its client application may include a “content client” component (Ex-1009 ¶95) that periodically establishes a connection with an ad server “to upload technical information about [the] device” and/or “personal information about a user of [the] device.” *Id.* ¶166. The ad server uses this information “to selectively choose one or more advertisements, which may be personally tailored to the user of” the sender device. *Id.* ¶194. Moreover, Levkovitz discloses that “text analysis” of text messages can be used “to selectively target advertisements to” the user such that if they receive or send a text message having the keyword “football” then “the system may modify” the text message “by selectively inserting or adding an advertisement related to that keyword.” Ex-1009 ¶222. Mumick’046 describes how SMS can be used to inter-work with instant messaging so that “[i]f an IM is sent to a mobile device, it is delivered as a SMS”

and the recipient “then responds with SMS.” Ex-1010 ¶60. Given that Mumick’046 already describes interactive message based services, a POSITA would have looked to Levkovitz as a specific example of an interactive service to combine with Mumick’046. The Mumick’046-Levkovitz combination would therefore result in a more customized and user-friendly experience, with targeted advertisements for users. Given that advertising was a well-known and lucrative interactive service, a POSITA would have been interested in including this functionality in Mumick’046’s system and would have looked to Levkovitz as a specific example of customized advertising techniques to combine with Mumick’046.

175. The Mumick’046-Levkovitz combination would also result in a more reliable and user-friendly experience since messages could be recorded even if access to the server were temporarily unavailable. Furthermore, the recording of the voice could be higher quality if recorded on the client since it would not have the potential of being degraded when transmitted to the server during recording. In any case, even if an application on a server were involved, a POSITA would have understood that there would have had to also be software (i.e., an application) on the mobile device in order to interact (i.e., transmit voice or a message) to that server. This is the nature of client-server applications, as I explain in my technical background section (*see* Section VII.C, ¶¶39-40). Stated simply, a processor based

client without any software to communicate with a server would not have any way to send a message to the server.

176. A POSITA would have had a reasonable expectation of success in combining Mumick’046 and Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations. In particular, both client and server are general purpose computing systems and each have the capacity to run all kinds of software including software applications. For example, common operating systems in commercially available mobile phones that I used by 2009 all had built in support for SMS messaging. *See, e.g.*, Ex-1033 (describing the “revolutionary” iPhone that “redefines what users can do on their mobile phones” including “mak[ing] calls by simply pointing at a name or number,” “go directly to those messages” that the user wants to listen to and “immediately randomly access those messages that interest them most,” “easily send and receive SMS messages in multiple sessions,” “easily choose a photo ... to include in an email”); Ex-1030 (Nokia 3250 User Guide); Ex-1040 (Nokia 9300 User Guide). They also all had connections to servers that a POSITA would have been familiar with. For example, contacts, applications, photos and messages could all be stored on device storage. Graphical user interfaces allowed users to interact with applications for making phone calls, looking up contacts, sending messages, etc. And connections to servers

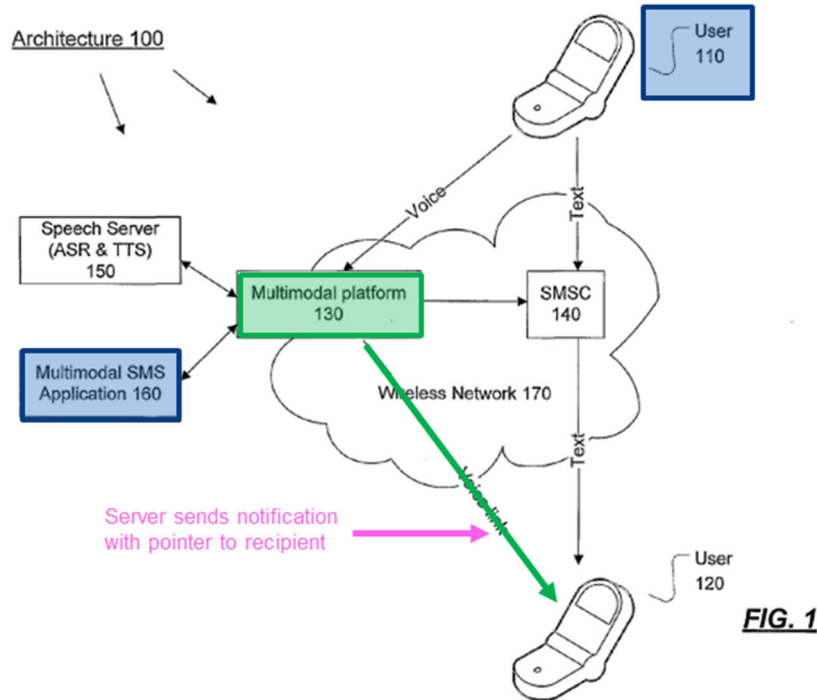
were provided for browsing the web and sending messages among other things. These are all exemplified in the January 9, 2007 announcement of the Apple iPhone (Ex-1033) which includes a description of the camera and photo management application (which provided storage for photos and a graphical user interface), an SMS application, and a web browser, which a POSITA would understand worked by connecting to web servers. Furthermore, I recall during that demonstration of the phone at the time of the announcement that the web browser was shown connecting to the New York Times web server. As such, it would be well within the skill of a POSITA to implement the functionality of a client application on any of the devices of Mumick'046 or Levkovitz.

**c. Element 1[b]: sending a notification comprising a pointer to said stored interactive multimodal message to said mobile device of the recipient by said server;**

177. In my opinion, Mumick'046 alone or Mumick'046-Levkovitz teaches Element 1[b].

178. (Ground 3) Mumick'046 teaches an interactive multimodal message stored at a server (*see* Sections XI.B.2.a (¶¶158-160) and XI.B.2.b (¶¶161-171)). *See, e.g.*, Ex-1010 ¶¶11 (“an automatic and unique identification of each message is stored at the multimodal platform”), 26 (system includes audio output and touch input capabilities), 59 (messages include “text, voice, and image”). Moreover, Mumick'046 further teaches sending a notification comprising a pointer to the stored

interactive multimodal message to the recipient's mobile device by the server. Mumick'046 teaches that after the user's voice "recording is completed and stored" at multimodal platform 130 (green), a text message is transmitted to the recipient, "notifying them that a voice message has been recorded and providing a link" to the stored voice message (pink), "which can be activated to listen to the message." Ex-1010 ¶24. In particular, Mumick'046's multimodal SMS application 160 (blue) combines the user's text message with "a link" to the recorded voice message utilizing "a message identifier" such that the user can retrieve the stored voice message "through the message identifier." Ex-1010 ¶27; *see also id.* ¶11 ("an automatic and unique identification of each message is stored at the multimodal platform without requiring the user to manually select the message for retrieval; the required links are inserted into selected user text messages, allowing for such retrieval without requiring every text SMS message transiting the service network to be handled by the multimodal platform").



179. A POSITA would have understood that Mumick’046’s “link” and/or “message identifier” that is provided in the SMS text message notification sent to the recipient by multimodal platform 130 (i.e., a server), which can be activated to retrieve the stored interactive multimodal message, are pointers because they are links that direct to the interactive multimodal message. In particular, Mumick’046’s link “can be activated to listen to the message” (Ex-1010 ¶24), and since listening to the message can occur only after being directed to the message, a POSITA would have understood this link to be a pointer. A POSITA would also have understood that a “link” as used in the ’949 Patent is a broad term used to describe a wide range of mechanisms that connect or “link” a user to the interactive message, including, e.g., a “text link.” Ex-1001, 4:16-18 (“The pointer may, for example, be a text link

to the stored interactive multimodal message, a USSD code, etc.’). As such, Mumick’046’s “message identifier” and “link,” which can be activated to listen to the stored message are pointers because they are used by the recipient to access the stored message. Ex-1010 ¶¶24, 27. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

180. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be

similar to sending a phone number via DTMF. Moreover, Mumick-046 explains that links “when activated (e.g. by clicking on the phone number) allows the receiving user to call the multimodal platform in order to retrieve the voice message.” Ex-1010 ¶37. Mumick-046 further explains that the link can be activated by using “normal outcalling”, that is standard DTMF tones. Ex-1010 ¶61.

181. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041.

182. (Ground 4) Levkovitz also teaches sending a notification comprising a pointer to the stored interactive multimodal message to the recipient for the same reasons I discuss in Ground 2 (*see* Section XI.A.2.c, ¶100). Levkovitz states that a recipient “may receive an indication that an incoming commercial content item/advertisement/SMS/MMS/IM/Email message is received,” in which case, the recipient can “press or click” on a soft-key and be provided user-selectable operations via an input unit. Ex-1009 ¶269. The user-selectable operations may include, e.g., virtually visiting, browsing, or redirecting the recipient to “a certain website (e.g., through a [URL] or other shortcut or pointer, which may be pre-

provided with the content item).” *Id.* Levkovitz further states that certain components of the system “may remotely, directly or indirectly trigger” the user’s device “to transmit a content request” by sending a message “having a link or a shortcut which may trigger a content request by” the recipient’s device. Ex-1009 ¶175. A POSITA thus would have recognized that Levkovitz specifies additional details and features (such as to “press or click” a link) that could be incorporated into the pointer/link taught by Mumick’046, and incorporated these features into Mumick’046—to the extent additional capabilities were necessary—with a reasonable expectation of success.

183. In particular, a POSITA would have been motivated to implement Levkovitz’s pointer into Mumick’046’s notification to the recipient to allow the system to more efficiently and quickly access a content request related to a specific message. Since Mumick’046 already has a link that can be activated, a POSITA would have looked to Levkovitz for further details about how to create such a link and to consider alternatives to Mumick’046’s link for further improvements. For example, Levkovitz specifies that the link provided in the notification can be a URL or other shortcut or pointer that is pre-provided with the item. A POSITA would have had a reasonable expectation of success in combining Mumick’046-Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and

predictable combinations. In particular, both Mumuck'046 and Levkovitz describe general purpose computing systems and each have the capacity to run all kinds of software including software applications. As such, it would be well within the skill of a POSITA to implement the functionality of Levkovitz's pointers within the computer system of Mumick'046.

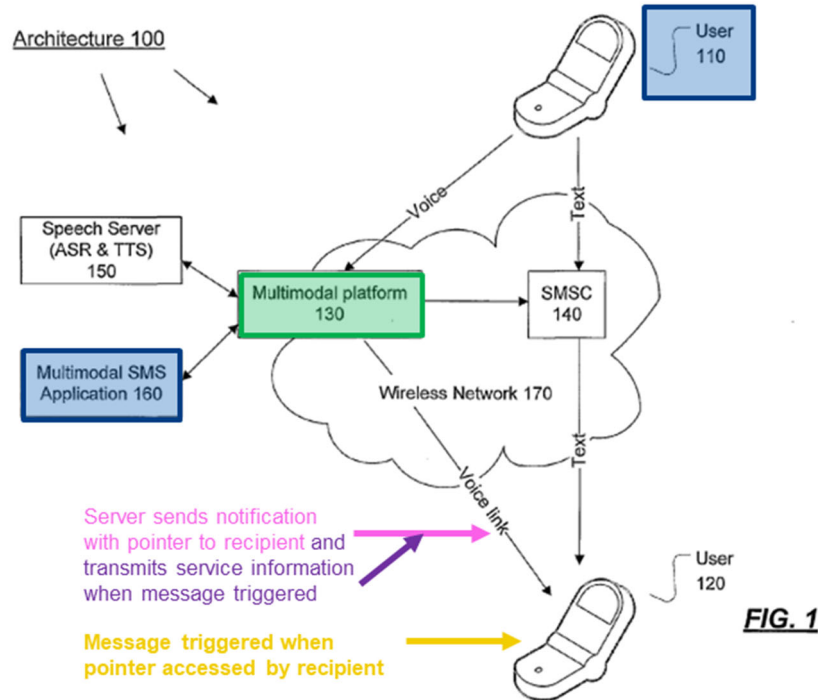
**d. Element 1[c]: triggering the stored interactive multimodal message on the mobile device of the recipient by accessing said pointer in said notification; and**

184. In my opinion, Mumick'046 alone or Mumick'046-Levkovitz teaches Element 1[c].

185. (Ground 3) Mumick'046 teaches an interactive multimodal message stored at a server (*see* Sections XI.B.2.a (¶¶158-160) and XI.B.2.b (¶¶161-171)). *See, e.g.*, Ex-1010 ¶¶11 (“an automatic and unique identification of each message is stored at the multimodal platform”), 26 (system includes audio output and touch input capabilities), 59 (messages include “text, voice, and image”). Moreover, Mumick'046 teaches the claimed notification comprising a pointer stored interactive multimodal message that is sent to the recipient's mobile device by the server (*see* Section XI.B.2.c, ¶¶177-181). *See, e.g.*, Ex-1010 ¶¶24 (“[a]fter the recording is completed and stored at the multimodal platform 130, a text SMS is sent to the receiving user 120, notifying them that a voice message has been recorded and providing a link”), 27 (“The multimodal SMS application 160 combines the text

message (if any) with a link to the spoken message, if desired by the user, using a message identifier.”).

186. Once the notification with the pointer is received, Mumick’046 teaches triggering the server-stored interactive multimodal message on the recipient’s mobile device by accessing the pointer to the stored voice message (pink), “which can be activated to listen to the message” (yellow). Ex-1010 ¶24, Fig. 1 (annotated). In particular, the “combined message is sent to the recipient(s) who can read the text message and retrieve, from the multimodal SMS application 160, the associated voice message through the message identifier.” Ex-1010 ¶27. For example, the user can “simply activate (‘click’) the link to access their message.” Ex-1010 ¶35; *see also id.* ¶55 (“The user receives the message and clicks on the multimodal SMS link to hear the [voicemail].”).



187. A POSITA would have understood that the recipient accessing the pointer (i.e., link and/or message identifier) in the notification by clicking it “triggers the stored interactive multimodal message” because it allows the recipient to retrieve the message from the multimodal platform. *Id.* ¶11. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

188. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF. Moreover, Mumick-046 explains that links “when activated (e.g. by clicking on the phone number) allows the receiving user to call the multimodal platform in order to retrieve the voice message.” Ex-1010, ¶37. Mumick-046 further explains that the link can be activated by using “normal outcalling”, that is standard DTMF tones. Ex-1010, ¶61.

189. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked

through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041.

190. (Ground 4) Levkovitz teaches this limitation for the same reasons I discuss in Ground 2 (*see* Section XI.A.2.d, ¶110). Ex-1009 ¶¶175, 269. Levkovitz states that certain components of the system “may remotely, directly or indirectly trigger” the recipient’s device “to transmit a content request” by sending a message “having a link or a shortcut which may trigger a content request by” the recipient’s device. Ex-1009 ¶175. A recipient receives “an indication that an incoming commercial content item/advertisement/SMS/MMS/IM/Email message is received,” and the recipient can “press or click” on a soft-key to be provided user-selectable operations via an input unit. Ex-1009 ¶269. The user-selectable operations may include, e.g., virtually visiting, browsing, or redirecting the user to “a certain website (e.g., through a [URL] or other shortcut or pointer, which may be pre-provided with the content item).” *Id.*; *see also id.* ¶175 (“For example, in one embodiment, device 170 may be remotely triggered using a ‘ping’ or ping-like message or packet, a ‘wake up’ message or packet, or the like. In some embodiments, for example, communicator 150, SMS gateway 163, or other component of the system 100 may send to device 170 a data item or message, e.g., having a link or shortcut with may trigger a content request by device 170. In some embodiments, device 170 may transmit a content request in response to an incoming signal or

message, a background incoming signal or message, a user-transparent incoming signal or message, a remote signal or message, or the like.”).

191. A POSITA thus would have recognized that Levkovitz specifies additional details and features (such as to “press or click” a link) that could be incorporated into the pointer/link taught by Mumick’046, and incorporated these features into Mumick’046—to the extent it is not already included as part of Mumick’046’s message identifier and/or additional capabilities were necessary—with a reasonable expectation of success. In particular, since Mumick’046 already has a link that can be activated, a POSITA would have looked to Levkovitz for further details about how to create such a link (e.g., as a URL, shortcut, or pointer) and to consider alternatives to Mumick’046’s link for further improvements.

192. A POSITA would have had a reasonable expectation of success in combining Mumick’046-Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations. In particular, both Mumuck’046 and Levkovitz describe general purpose computing systems and each have the capacity to run all kinds of software including software applications. As such, it would be well within the skill of a POSITA to implement the functionality of Levkovitz’s pointers within any of the computer systems of Mumick’046.

**e. Element 1[d]: transmitting service information to the mobile device of the recipient through said triggered interactive multimodal message;**

193. In my opinion, Mumick'046 alone or Mumick'046-Levkovitz teaches Element 1[d].

194. (Ground 3) Mumick'046 teaches a triggered interactive multimodal message (*see* Section XI.B.2.d, ¶¶184-189). *See, e.g.*, Ex-1010 ¶¶24 (“[a]fter the recording is completed and stored at the multimodal platform 130, a text SMS is sent to the receiving user 120, notifying them that a voice message has been recorded and providing a link”), 27 (“The multimodal SMS application 160 combines the text message (if any) with a link to the spoken message, if desired by the user, using a message identifier.”), 30 (the user can “simply activate (‘click’) the link to access their message”). Mumick'046 further teaches transmitting service information to the mobile device of the recipient through the triggered interactive multimodal message, because the text message transmitted to the recipient “may also contain additional content provided by the sender.” Ex-1010 ¶24. Mumick'046 states that “additional information (other than the message and identifier)” can be included in “the body of the multimodal SMS message,” such as, e.g., “information helpful in identifying the message (e.g. the first few words of the original text message).” Ex-1010 ¶63. A POSITA would have understood that service-related content information encompasses “information helpful in identifying the message” to the recipient such

as “the first few words” of the message. This is consistent with the disclosures of the ’949 Patent, which state that “transmitted service information may, for example, comprise advertisements, alerts, or *service content previews provided by the sender*.” Ex-1001, 4:38-40. Furthermore, Mumick’046 describes how to inter-work with instant messaging (IM), further exemplifying how a service is provided within its system. Ex-1010 ¶60 (“If an IM is sent to a mobile device, it is delivered as a SMS. The mobile user then responds with SMS.”).

195. (Ground 4) Levkovitz teaches transmitting service information to the mobile device of the recipient through the triggered interactive multimodal message for the same reasons I discuss in Ground 2 (*see* Section XI.A.2.e, ¶¶117-118). Levkovitz teaches that system 100 may include suitable components such as MMS Center 161, SMS interceptor 162, SMS gateway 163, “and/or other servers or components” that are “operatively associated with communicator 150 and/or ad server 110,” which can be utilized to send and receive SMS and MMS messages “having embedded therein a content item served by ad server 110.” Ex-1009 ¶170. For instance, Levkovitz teaches that a sender’s mobile device sends a message to a recipient’s mobile device; the system may “intercept” and “modify the message, e.g., by adding, inserting, augmenting, appending or embedding into the message a content item stored in ad server 110”; and the modified message is sent to the recipient’s mobile device. *Id.*

196. Levkovitz further states that “a triggering event may occur in the” recipient’s mobile device such as “an incoming SMS message” being received, Ex-1009 ¶299, which causes an application such as a SMS viewer application to be automatically or manually opened or launched by the recipient’s mobile device “in response to the triggering event.” Ex-1009 ¶300. The recipient “may select to view the incoming SMS message,” Ex-1009 ¶301, and “the incoming SMS message may be presented” along with “a content item embedded within (e.g., an advertisement)” on the display of the recipient’s mobile device. Ex-1009 ¶302; *see also id.*, Fig. 13 (box 1370 depicting an exemplary screen-shot of the mobile device display with “the incoming SMS message, followed by a textual advertisement” with options for interaction). A POSITA would have understood that these advertisements transmitted to the mobile device would be visible to a user who could then click on them, which was standard practice for mobile ads in 2009. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

197. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF. Moreover, Mumick-046 explains that links “when activated (e.g. by clicking on the phone number) allows the receiving user to call the multimodal platform in order to retrieve the voice message.” Ex-1010 ¶37. Mumick-046 further explains that the link can be activated by using “normal outcalling”, that is standard DTMF tones. Ex-1010 ¶61.

198. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for

developing this advertising payment model. Ex-1041. As such, the advertisements are content information that are related to a service (providing information about the things being advertised).

199. A POSITA would have been motivated to implement Levkovitz's teachings of embedding advertisements in an incoming message into Mumick'046's system to improve users' interactive experiences by providing them customized advertisements based on their content requests and allowing them to control what advertisements they interact with. As Mumick'046 already describes interactive message based services (e.g., through its inter-working with instant message), a POSITA would naturally have looked for other examples and more detail of interactive message based services to expand the teachings of Mumick'046. Given that advertising was a well-known and lucrative interactive service, a POSITA would have looked to Levkovitz as a specific example of such interactive services to combine with Mumick'046.

200. A POSITA would have had a reasonable expectation of success in combining Mumick'046-Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations. In particular, both Mumuck'046 and Levkovitz describe general purpose computing systems and each have the capacity to run all kinds of software including software applications. For example, common

operating systems in commercially available mobile phones that I used by 2009 all had built in support for SMS messaging. *See, e.g.*, Ex-1033 (describing the “revolutionary” iPhone that “redefines what users can do on their mobile phones” including “mak[ing] calls by simply pointing at a name or number,” “go directly to those messages” that the user wants to listen to and “immediately randomly access those messages that interest them most,” “easily send and receive SMS messages in multiple sessions,” “easily choose a photo ... to include in an email”); Ex-1030 (Nokia 3250 User Guide); Ex-1040 (Nokia 9300 User Guide). They also all had connections to servers that a POSITA would have been familiar with. For example, contacts, applications, photos and messages could all be stored on device storage. Graphical user interfaces allowed users to interact with applications for making phone calls, looking up contacts, sending messages, etc. And connections to servers were provided for browsing the web and sending messages among other things. These are all exemplified in the January 9, 2007 announcement of the Apple iPhone (Ex-1033) which includes a description of the camera and photo management application (which provided storage for photos and a graphical user interface), an SMS application, and a web browser, which a POSITA would understand worked by connecting to web servers. Furthermore, I recall during that demonstration of the phone at the time of the announcement that the web browser was shown connecting to the New York Times web server. As such, it would be well within the skill of a

POSITA to implement the functionality of Levkovitz's pointers within any of the computer systems of Mumick'046.

**f. Element 1[e]: whereby the interactive multimodal message triggered on the mobile device enables said recipient interaction.**

201. In my opinion, Mumick'046 alone or Mumick'046-Levkovitz teaches Element 1[e].

202. Mumick'046 teaches a triggered interactive multimodal message (*see* Section XI.B.2.d, ¶¶184-189). *See, e.g.*, Ex-1010 ¶¶24 (“[a]fter the recording is completed and stored at the multimodal platform 130, a text SMS is sent to the receiving user 120, notifying them that a voice message has been recorded and providing a link”), 27 (“The multimodal SMS application 160 combines the text message (if any) with a link to the spoken message, if desired by the user, using a message identifier.”), 30 (the user can “simply activate (‘click’) the link to access their message”). Moreover, Mumick'046 teaches that the triggered interactive multimodal message enables recipient interaction. That is, when “retrieving the voice message” from the multimodal platform, the recipient may “reply by voice, thereby continuing an exchange of voice messages.” Ex-1010 ¶37.

203. Moreover, a recipient may “reply to a voice mail by SMS.” Ex-1010 ¶55. For example, a user may call to leave a voicemail for another user and, after recording it, the voicemail system “automatically sends a multimodal SMS message

to” the recipient user. Ex-1010 ¶55. The recipient user “receives the message and clicks on the multimodal SMS link to” listen to the voicemail. Ex-1010 ¶55. While listening to the voicemail, the system may “allow the user to send a reply multimodal SMS message” by presenting a menu to the user, which allows “the user to record a message.” Ex-1010 ¶55. The recorded message is sent to the original user that sent a voicemail, “as a multimodal SMS message.” Ex-1010 ¶55. Thus, the recipient in Mumick’046 interacts with the triggered interactive multimodal message in the same manner as the ’949 Patent, which discloses that “interaction” may include “replying to the interactive multimodal message.” Ex-1001, 5:33-39.

**3. Dependent Claim 2: The method of claim 1, wherein the recipient triggers the interactive multimodal message using on[e] or more of dual-tone multi frequency dialogs, prompts in voice extensible markup language, automated speech recognition, and a hypertext transfer protocol post.**

204. In my opinion, Mumick’046 alone or Mumick’046-Levkovitz teaches Claim 2.

205. (Ground 3) Mumick’046 teaches that a recipient triggers an interactive multimodal message (*see* Section XI.B.2.d, ¶¶184-189). *See, e.g.*, Ex-1010 ¶¶24 (“[a]fter the recording is completed and stored at the multimodal platform 130, a text SMS is sent to the receiving user 120, notifying them that a voice message has been recorded and providing a link”), 27 (“The multimodal SMS application 160 combines the text message (if any) with a link to the spoken message, if desired by

the user, using a message identifier.”), 30 (the user can “simply activate (‘click’) the link to access their message”). Moreover, Mumick’046 teaches that the recipient triggers the interactive multimodal message using at least dual-tone multi frequency (DTMF) dialogs. For example, Mumick’046 teaches that a recipient may activate the link included in the notification to access the stored voice message by clicking on the link. Ex-1010 ¶35 (the user “simply activate[s] (‘click[s]’) the link to access their message”). In one embodiment, the link can be activated by “clicking on the phone number” provided in the message. Ex-1010 ¶37. And furthermore, Mumick-046 describes that activating the link can use “normal outcalling” to provide information to recipients. Ex-1010 ¶61 (“If the recipient then wishes to access the message, the recipient activates the link in the multimodal SMS message and is connected to the multimodal platform 130.”). Alternatively, Mumick’046 states that the message identifier associated with the stored voice message “can be added automatically to a text SMS message” that is sent to the recipient and the recipient can use their device to “dial[] a number within such an SMS message” to “retrieve the voice message.” Ex-1010 ¶38; *see also id.* ¶33 (a user can use “manual entry (by voice or through a touch-pad or keyboard)” to retrieve a message). For all these reasons, a POSITA would have understood that triggering the content by clicking on a link or dialing a number manually on a telephonic keypad (as opposed to full

alphanumeric) would have used DTMF tones (i.e., touch tones) to access the content, in the same way that voicemail can be accessed.

206. As I explain in the technical background section (*see* Section VII.B, ¶¶36-38), a basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

207. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF. Moreover, Mumick-046 explains that links “when activated (e.g. by clicking on the phone number) allows the receiving

user to call the multimodal platform in order to retrieve the voice message.” Ex-1010

¶37. Mumick-046 further explains that the link can be activated by using “normal outcalling”, that is standard DTMF tones. Ex-1010 ¶61.

208. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041. A POSITA thus would have understood that the recipient may trigger the interactive multimodal message in Mumick’046’s system using DTMF dialogs.

209. (Ground 4) To the extent that a POSITA would have desired additional implementation details, this claim is also taught by Levkovitz. Levkovitz teaches that the user’s device 170 “may communicate with communicator 150 and/or ad server 110” (which store the content to be transmitted to the recipient) “using server communicator 177,” which “may utilize HyperText Transfer Protocol (HTTP) or a HTTP library to communicate with communicator 150 and/or ad server 110.” Ex-1009 ¶167. A POSITA would have recognized that triggering the content at the server using HTTP would constitute an “HTTP” request such as a POST or GET request because the recipient’s content request sends data to the server that causes

the server to create or update a resource. For example, the recipient's HTTP request causes the ad server to add transmitted service information (e.g., advertisements) or update the message to include embedded advertisements when it is sent back to the recipient. A POSITA would further have understood that one way that a user would click data such as the URL, shortcut, or pointer provided in Levkovitz's notification would be on the mobile device's standard keypad and that such clicking would result in that data being transmitted using the standard dual-tone multi frequency (DTMF) tones, which have been used to transmit keypresses over voice channels on telephones for decades. As I explain in my technical background section (*see* Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009.

210. A POSITA would have been motivated to combine Mumick'046-Levkovitz and had a reasonable expectation of success in doing so, for at least the reasons I discuss in Section XI.B.1, ¶¶153-157. Given that Mumick'046 already describes manual entry of numbers or clicking a link using DTMF tones, a POSITA would naturally have looked for other examples and more detail of response systems to improve the teachings of Mumick'046. A POSITA would have recognized that Levkovitz specifies additional details and features (such as to "press or click" a link and communicate with the ad server that stores content to be transmitted to the user via HTTP) that could be incorporated into Mumick'046's system, and incorporated these features into Mumick'046's system with a reasonable expectation of success.

In particular, since Mumick'046 already has a link that can be activated, a POSITA would have looked to Levkovitz for further details about how to create such a link (e.g., as a URL, shortcut, or pointer) and how to communicate with the server via the link to consider alternatives to Mumick'046 for further improvements.

**4. Dependent Claim 4: The method of claim 1, wherein the interactive multimodal message is triggered on activating a link in a text message on the mobile device by the recipient.**

211. In my opinion, Mumick'046 alone or Mumick'046-Levkovitz teaches Claim 4.

212. (Ground 3) Mumick'046 teaches that a recipient triggers an interactive multimodal message (*see* Section XI.B.2.d, ¶¶184-189). *See, e.g.*, Ex-1010 ¶¶24 (“[a]fter the recording is completed and stored at the multimodal platform 130, a text SMS is sent to the receiving user 120, notifying them that a voice message has been recorded and providing a link”), 27 (“The multimodal SMS application 160 combines the text message (if any) with a link to the spoken message, if desired by the user, using a message identifier.”), 30 (the user can “simply activate (‘click’) the link to access their message”). Moreover, Mumick'046 teaches triggering the interactive multimodal message by activating a link in a text message on the recipient's mobile device.

213. Mumick'046's system “advantageously” provides “automatic procedures” such that “if the user is provided with a link (e.g. within an SMS

message),” the multimodal application identifies “the requested message completely automatically ... requiring the user to simply activate (click) the link to access their message.” Ex-1010 ¶35; *see also id.* ¶55 (“The user receives the message and clicks on the multimodal SMS link to hear the VM.”). Mumick’046 further states that “the required links are inserted into selected user text messages” and that “[t]he present invention provides several embodiments for inserting the message identification links into the text SMS messages.” *Id.* ¶¶11-12. Thus, a POSITA would have understood that the notification with the message identifier (i.e., link) to the message may be sent to the recipient in the form of a text message. As I explain in my technical background section (see Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

214. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user

120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF. Moreover, Mumick-046 explains that links “when activated (e.g. by clicking on the phone number) allows the receiving user to call the multimodal platform in order to retrieve the voice message.” Ex-1010 ¶37. Mumick-046 further explains that the link can be activated by using “normal outcalling”, which is standard DTMF tones. Ex-1010 ¶61.

215. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041. A POSITA thus would have understood that the recipient may trigger the interactive multimodal message in Mumick’046’s system using DTMF dialogs.

216. (Ground 4) This claim is also taught by Levkovitz for the same reasons I discuss in Ground 2 (*see* Section XI.A.4, ¶134). Levkovitz teaches that certain components of the system may “trigger” the recipient’s device “to transmit a content request” by sending a message “having a link or a shortcut which may trigger a content request by” the recipient’s device. Ex-1009 ¶175; *see also id.* ¶39 (“message” includes SMS messages). A recipient receives “an indication that an incoming commercial content item/advertisement/SMS/MMS/IM/Email message is received,” and the recipient can “press or click” on a soft-key to be provided user-selectable operations via an input unit. Ex-1009 ¶269. The user-selectable operations may include virtually visiting, browsing, or redirecting the user to “a certain website (e.g., through a [URL] or other shortcut or pointer, which may be pre-provided with the content item).” *Id.*; *see also id.* ¶175 (“system 100 may send to device 170 a data item or a message, e.g., having a link or a shortcut which may trigger a content request by device 170”). A POSITA would have understood that the recipient triggers the interactive message when it activates the link or URL in the message (which may be a text message) by pressing or clicking it to access a content item. Levkovitz describes sending the links or URLs via a range of communication technologies and because one of them is SMS for messages, it would have been clear to a POSITA that one of the ways those links or URLs could have been sent would have been in an (SMS) text message. As I explain in my technical background

section (*see* Section VII.B, ¶¶36-38), it was common by 2009 to be able to click on URL links within text messages as many mobile devices of that time included touch screens for interacting with text messages, web connectivity, and interactive web browsers.

217. A POSITA thus would have recognized that Levkovitz specifies additional details and features (such as to “press or click” a link) that could be incorporated into the pointer/link taught by Mumick’046, and incorporated these features into Mumick’046—to the extent additional capabilities were necessary—with a reasonable expectation of success.

218. In particular, a POSITA would have been motivated to implement Levkovitz’s pointer and link-activation capabilities into Mumick’046’s notification to the recipient—to the extent it is not already included as part of Mumick’046’s message identifier or link and/or additional capabilities were necessary—to allow the system to more efficiently and quickly access a content request related to a specific message. Since Mumick’046 already has a link that can be activated, a POSITA would have looked to Levkovitz for further details about how to create such a link and to consider alternatives to Mumick’046’s link for further improvements. For example, Levkovitz specifies that the link provided in the text message notification can be a URL or other shortcut or pointer that is pre-provided with the item. Looking to Levkovitz’s teachings would provide a POSITA with additional

information to implement and improve Mumuck'046's existing link technologies by making it faster and easier for users. A POSITA would have had a reasonable expectation of success in combining Mumick'046 and Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations, as I explain in Section XI.B.1, ¶¶153-157.

**5. Dependent Claim 5: The method of claim 1, wherein said transmitted service information provides the recipient with one or more options, wherein the recipient selects one of said provided options.**

219. In my opinion, Mumick'046 alone or Mumick'046-Levkovitz teaches Claim 5. Mumick'046 alone or Mumick'046-Levkovitz teaches transmitted service information (*see* Section XI.B.2.e, ¶¶193-200). *See, e.g.*, Ex-1010 ¶63 (“additional information (other than the message and identifier) may be added to the body of the multimodal message” such as “information helpful in identifying the message (e.g., the first few words of the original text message”); Ex-1009 ¶302 (“the incoming message may be presented, and a content item embedded within (e.g., an advertisement) may be presented ... on the screen of the wireless communication device”).

220. (Ground 3) Mumick'046 also teaches that the transmitted service information provides the recipient with one or more options, wherein the recipient selects one of the provided options. Mumick'046 states that its system “provides the

ability to reply to a voice mail by SMS.” Ex-1010 ¶55. For example, a menu may be presented to the recipient when they listen to a voicemail, which allows them “to record a message” that may then be sent to the original user that sent a voicemail, “as a multimodal SMS message.” Ex-1010 ¶55. A POSITA would have found it obvious that the SMS message sent to the user in the voicemail example that also provides a menu to the user to select an option to record a reply message could include “information helpful in identifying the message (e.g. the first few words of the original text message)” (i.e., transmitted service information). For example, Mumick’046 states that “[t]he multimodal SMS service also allows ... inter-working with standard voice mail systems.” Ex-1010 ¶55. In the example implementation disclosed by Mumick’046, “a caller leaves a voice mail (VM) for the user,” and “[a]fter recording, the VM system automatically sends a multimodal SMS message to the VM user.” *Id.* “The user receives the message and clicks on the multimodal SMS link to hear the VM.” *Id.* A POSITA would have found it obvious that the multimodal SMS message automatically sent to the VM user after a recording is completed would include the same features and “additional information” as the multimodal SMS messages sent to the user in Mumick’046’s other examples, including, for example, a content preview because this is “information helpful in identifying the message.” Ex-1010 ¶63. The motivation for including a content preview with a voicemail message, similar to the motivation disclosed by

Mumick'046 for SMS messages, would be to allow the system “to distinguish various multimodal SMS messages received by a user.” Ex-1010 ¶63.

221. (Ground 4) This claim is also taught by Levkovitz for the same reasons I discuss in Ground 2 (*see* Section XI.A.5, ¶¶139-141). Levkovitz teaches that the recipient's mobile device has a display unit for displaying at least one “user-selectable operations” that are “selectively associated with an advertisement embedded within an incoming message.” Ex-1009, Abstract. Moreover, Levkovitz states that the device may have “a soft-key or other user interface” for selecting an operation from at least one “user-selectable operations selectively associated with the advertisement embedded within the incoming message.” Ex-1009 ¶66. The selectable operations include, e.g., calling “a destination related to the advertisement” and “storing a coupon included in the advertisement” locally for later presentation. Ex-1009 ¶67.

222. Levkovitz also teaches that “a triggering event may occur in the” device such as “an incoming SMS message” being received. Ex-1009 ¶299. An application such as a SMS viewer application may be automatically or manually opened or launched by the recipient's mobile device or the recipient, respectively, “in response to the triggering event.” Ex-1009 ¶300. The recipient “may select to view the incoming SMS message,” Ex-1009 ¶301, which “may be presented” along with “a

content item embedded within (e.g., an advertisement)” on the display of the device.

Ex-1009 ¶302.

223. Levkovitz’s Figure 13 depicts an exemplary device display that presents “the incoming SMS message, followed by a textual advertisement.” The display includes user-selectable “options” and “back” actions (1372, 1374), which may be “associated with two, respective, keys of soft-keys of the” mobile device. Ex-1009 ¶302. A box 1350, “the user may select the ‘options’ action” and at box 1360, in response, “a menu may be presented,” displaying at least one user-selectable option, “which may be associated with the content item (e.g., the advertisement) presented in box 1370.” Ex-1009 ¶303. Box 1380 depicts an exemplary screen-shot of the resulting device display, including a menu with two portions: “an upper portion showing selectable options related to the incoming SMS message (e.g., reply to the sender, forward the message, or delete the message), and a lower portion showing selectable options related to the content item (e.g., the advertisement) of box 1370 (e.g., show a special offer related to the advertisement, show a map of a location related to the advertisement, call a store or cinema or another destination related to the advertisement, buy tickets or goods related to the advertisement, or the like).” Ex-1009 ¶303.

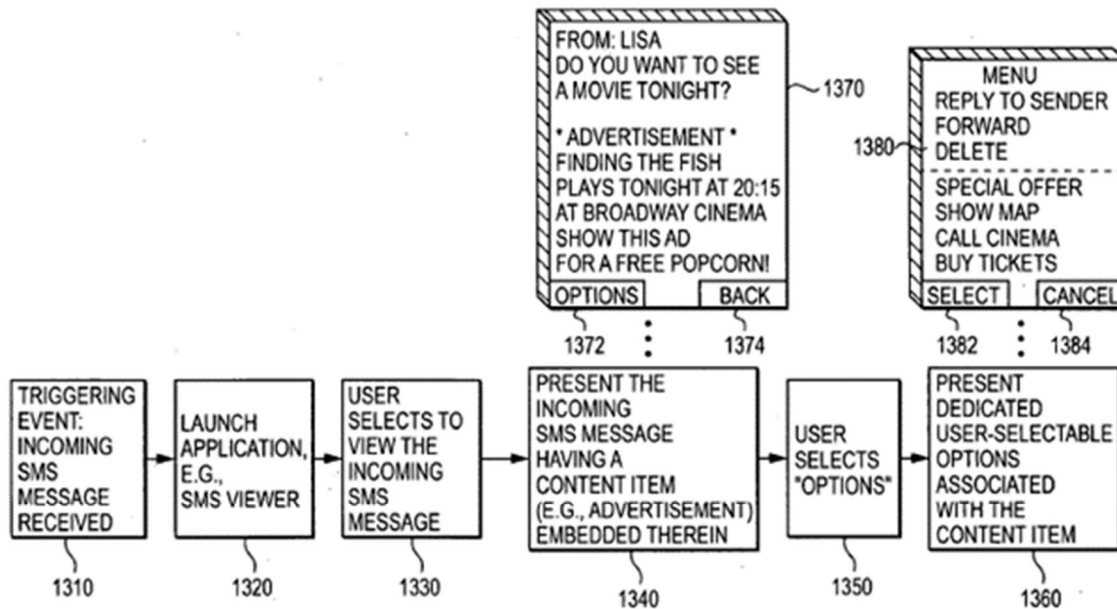


FIG. 13

224. A POSITA would have been motivated to implement Levkovitz's teachings of embedding advertisements in an incoming message and providing user-selectable operations that enable the recipient to interact with the advertisements and/or multimodal messages into Mumick'046's system to improve users' interactive experiences by providing them customized service information based on their content request and allowing them to control what content they interact with by, e.g., storing a coupon or buying tickets or goods relating to an advertisement. As Mumick'046 already describes interactive message based services, a POSITA would naturally have looked for other examples and more detail of interactive message based services to expand the teachings of Mumick'046. Being able to interact with advertisements, such as clicking on advertisement to follow a link to the advertiser,

was extremely common and lucrative technology that a POSITA would have been familiar with. Ads typically generated more revenue when a user clicked on it, and this “click-through” rate was typically tracked and reported to advertisers. Given that advertising was a well-known and lucrative interactive service, a POSITA would have looked to Levkovitz as a specific example of such interactive services to combine with Mumick’046. As I explain in my technical background section (see Section VII.B, ¶¶36-38), this kind of click-through technology was well-known by 2009. A basic part of personal computing technology for decades has included the ability to display received information with links to other information and click or tap or interact with those links to “click through” to the linked information. This has been the essence of the World Wide Web in web browsers since the 1990s. It also is well-known in other information displays.

225. For example, text messages could include linked information that would allow clicking through to the linked information (Ex-1043, ¶29 (“The Multimodal SMS application 160 then generates a text SMS containing a link, which when activated (e.g., by clicking on the phone number) allows the receiving user 120 to call the multimodal platform 130 in order to retrieve the voice message.”)) by automatic dialing of a phone number using standard DTMF tones. Ex-1030, 27 (“Send DTMF – to send DTMF tone strings (for example, a password. Enter the DTMF string or search for it in Contacts. ... To send the tone, select OK. Tip: You

can add DTMF tones to the Phone number or DTMF fields in a contact card.”). A POSITA would have understood that DTMF tone strings for passwords would be similar to sending a phone number via DTMF. Moreover, Mumick-046 explains that links “when activated (e.g. by clicking on the phone number) allows the receiving user to call the multimodal platform in order to retrieve the voice message.” Ex-1010 ¶37. Mumick-046 further explains that the link can be activated by using “normal outcalling”, that is standard DTMF tones. Ex-1010 ¶61.

226. No matter how one clicked through a link, doing so was a standard and lucrative technology for advertising. With the advent of click-through computing technology, advertising shifted its cost structure from “impressions” (how many times an advertisement was seen) to “pay per click” (how many times a user clicked through a link to an advertisement). Google was particularly recognized for developing this advertising payment model. Ex-1041. As such, a POSITA would have understood that the notice with the linked unique identifier could be sent as a text message in Mumick. Thus, a POSITA would have been motivated to use such click-through advertising technology in Mumick’046 to apply industry standard technology and to increase revenue. Moreover, Mumick’046 already discloses that its “user input and/or output devices” are “capable of pickup and playback of speech and ... entering and displaying text information.” Ex-1010 ¶26. And that it provides a “menu” to the user that allows them to select to reply to a voicemail. A POSITA

would have been motivated to implement Levkovitz's more detailed menu with user-selectable operations relating to advertisements (other multimedia content) because it would provide more interaction abilities for the user and therefore result in a more user-friendly system.

227. A POSITA would have had a reasonable expectation of success in combining Mumick'046-Levkovitz because these references disclose interrelated teachings based on routine technologies that would have been amenable to various well-understood and predictable combinations. In particular, supporting "click-through" advertisements or other forms of interactive experiences used standard technology which would have been well within the skill of a POSITA to implement using the general purpose computer systems disclosed by Mumick'046 and Levkovitz.

**6. Dependent Claim 9: The method of claim 1, further comprising the step of forwarding the interactive multimodal message to a plurality of second recipients simultaneously.**

228. In my opinion, Mumick'046 alone or Mumick'046-Levkovitz teaches Claim 9.

229. (Ground 3) Mumick'046 teaches an interactive multimodal message (see Section XI.B.2.a, ¶¶158-160). See, e.g., Ex-1010 ¶¶26 (system includes audio output and touch input capabilities), 59 (messages include "text, voice, and image"). Mumick'046 further teaches sending the interactive multimodal message to a

plurality of second recipients simultaneously. Mumick'046 teaches that multimodal SMS messages may "be sent to a group or a mailing list as desired," which is "stored in the network ... or the user device or any combination of the two." Ex-1010 ¶53. Moreover, Mumick'046 states that when the provided address is received by the multimodal platform, it is "used to send the multimodal SMS message to the desired recipient (or list of recipients)." Ex-1010 ¶62.

230. A POSITA would have understood that Mumick'046's ability to send multimodal SMS messages to a list of recipients meets this claim because forwarding is an obvious extension of initial addressing. For example, a POSITA would have understood sending to multiple recipient addresses or phone numbers would result in the message being sent to all listed recipients simultaneously whether it is originally addressed to those recipients or forwarded to them. Indeed, the concept of forwarding messages and media was very well-known by 2009, as was the concept of sending a message to multiple recipients simultaneously. *See, e.g.*, Ex-1040, 26 (Nokia 9300 User Guide: "To forward a message, Press Menu, and Select Write → Forward."), 41 ("With contact groups you can send the same message to a group of people at the same time."), 90 ("Shift+Ctrl+G" is a shortcut for "Forward"); Ex-1030, 33 (Nokia 3250 User Guide: "You can create, send, receive, view, edit, and organize text messages, multimedia messages, e-mail messages, presentations, and documents. You can also ... receive and forward picture messages."), 47 ("You can

create groups, which allow you to send text messages or e-mail to many recipients at the same time.”); Ex-1038, 97 (RealPlayer’s “Multicast[:] Used for broadcasting large events over the Internet. Allows many computers to play the single stream simultaneously.”). This was a standard technology, commonly implemented when a user could enter multiple recipients in a message.

231. Similarly, standard and well-known email technology supported simultaneous sending of messages to multiple participants. That was operated in a similar way as messages in that a user could enter multiple email recipients while composing an email, and when the email was sent by pressing a “send” button, the email would be transmitted to all of those recipients simultaneously. It was also well-known to forward numerous other kinds of documents. For example, a 2006 document from Cisco Systems describing shared services in the federal government listed “voicemail forwarding” as an example of features increase the ease of interagency collaboration via IP telephony. Ex-1042, 1. Similarly, a 2005 Sony Ericsson manual for the Z520a mobile phone described that phone as having the capability to forward additional content such as ringtones. Ex-1028, 2. A POSITA therefore would have known how to implement this capability as a routine design choice to enable addressing multiple recipients at once. Doing so would require nothing more than routine software components because the concept of sending a message to multiple recipients simultaneously was well-known, and Mumick’046

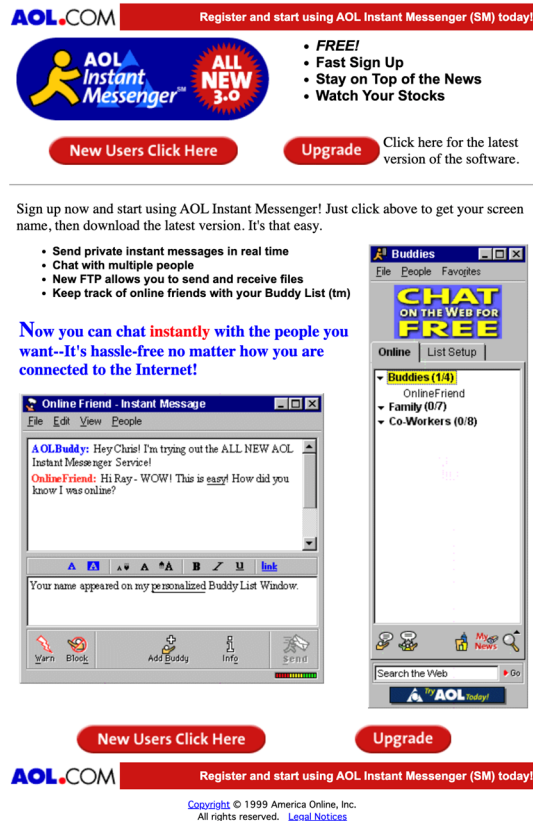
uses general purpose computers, such that implementing this teaching within Mumick'046's system would have been well within the skill of a POSITA.

232. (Ground 4) To the extent that a POSITA would have desired additional implementation details, Levkovitz teaches forwarding an interactive multimodal message to a plurality of second recipients simultaneously. Levkovitz teaches that the user “may be presented with a set of operations” to choose from including to “forward the content item and/or the incoming message and/or a portion thereof (e.g., to another wireless communication device or to another recipient).” Ex-1009 ¶269. Moreover, Levkovitz teaches that its network handler communicates “in parallel with multiple devices.” Ex-1009 ¶138.

233. Levkovitz also states that multiple ports are “included in communicator 150, to allow parallel or substantially simultaneous handling of multiple content requests.” Ex-1009 ¶140; *see also id.* ¶141 (“content requests ... may be processed ... in parallel or substantially simultaneously”). Group text messages were known by 2009 such that it would have been obvious to a POSITA that a message could be forwarded by one recipient to a plurality of other recipients simultaneously. For example, a POSITA would have understood that a well-known way to forward a message to multiple recipients was to list the multiple recipient addresses or phone numbers in the message and then press “send” (or equivalent), which would result in the message being sent to all listed recipients simultaneously.

234. As I explain in my technical background section (*see* Section VII.A, ¶¶33-35), the earliest of computing systems supported electronic communications through various techniques including email and chat, then later (but still before the time the '949 Patent) social networks. All of these supported various techniques to decide who to address the communications to. It never made sense to ask a human user to remember the address of all possible recipients, and so it is no surprise that various recipient addressing techniques were developed early on. For example, I remember using email clients such as “Pine” back in the 1990s that had a built-in address book where I could enter the names and email address of recipients, and then use them to easily select who to send emails to. And by 1999, as shown in the screenshot below (Ex-1032), commercial services, such as AOL Instant Messenger (AIM) provided “buddy lists”, which were a form of an address book of online friends to direct short messages to.

Declaration of Dr. Benjamin B. Bederson  
U.S. Patent No. 7,929,949



235. Similarly, cell phones commonly had contact lists or address books built in that were available for users to select recipients from in order to send short text messages. For example, as shown in a user guide (Ex-1030, 34) from the Nokia 3250 mobile phone from 2005, it let users select recipients or groups from the built-in “Contacts” program in order to send short text messages.

M e s s a g i n g

■ Write and send messages

The wireless network may limit the size of MMS messages. If the inserted picture exceeds this limit, the device may make it smaller so that it can be sent by MMS.

Your device supports the sending of text messages beyond the character limit for a single message. Longer messages are sent as a series of two or more messages. Your service provider may charge accordingly. Characters that use accents or other marks, and characters from some language options like Chinese, take up more space limiting the number of characters that can be sent in a single message.

Before you can send and receive an SMS message, a multimedia message, or an e-mail, or connect to your remote mailbox, you must have the correct connection settings in place. See "Messaging settings," p. 41.

1. To create a message, select **Menu** > **Messag.** > **New message** and from the following options:

**Text message** — to create a text message

**Multimedia message** — to create a multimedia message (MMS)

**E-mail** — to create an e-mail message. If you have not set up your e-mail account, you are asked if you want to do so.

2. Press the joystick to select the recipients or groups from **Contacts** or enter the phone number or e-mail address of the recipient in the **To** field. To add a semicolon (;) to separate each recipient, press \*.

236. Many of these systems supported sending a message to a group of people simultaneously including at least email and text messaging. For example, documentation for the Pine email system I used in the 1990s had information about sending messages to multiple recipients. Ex-1039. Similarly, it was also common practice to be able to send text messages to multiple recipients. For example, the user manual for the Nokia 9300 mobile phone available in 2005 explained this (Ex-1040, 31):

M e s s a g i n g

Press **Write message**, select **Text message**, and press **OK**.

To write a new text message, press **Recipient** to select the recipients of the message, or enter the recipients' GSM phone numbers in the **To:** field. If you enter more than one number, separate the numbers with a semicolon or by pressing the Enter key after each number. Write the message, and press **Send**. You can see the number of characters that are left in the character counter. Note that a text message can only contain unformatted text.

237. A POSITA would have known how to implement this capability as a routine design choice to enable addressing multiple recipients at once. Doing so would require nothing more than routine software components because the concept of sending a message to multiple recipients simultaneously was well-known, and Levkovitz uses general purpose computers, such that implementing this teaching within Levkovitz's system would have been well within the skill of a POSITA.

238. A POSITA would have been motivated to combine Mumick'046-  
Levkovitz and had a reasonable expectation of success in doing so, for the reasons I discuss in Section XI.B.1, ¶¶153-157. For example, A POSITA would have been motivated to combine Mumick'046 and Levkovitz because they would have recognized a benefit of incorporating Levkovitz's teachings of embedding advertisements in an incoming message and providing user-selectable operations that enable the recipient to interact with the advertisements (and/or multimodal messages) into a system like Mumick'046. The combined system would improve the user's interactive experience by providing users customized advertisements based on their content request and allow them to control what advertisements they interact with by, e.g., deleting, selecting, forwarding, and replying to content (if the content is messages) and storing a coupon or buying tickets or goods (if the content is an advertisement). Ex-1009 ¶¶67, 303.

239. A POSITA would also have had a reasonable expectation of success in combining the teachings of Mumick'046-Levkovitz. Mumick'046 and Levkovitz both disclose methods for enabling recipient interaction through the delivery of multimodal messages using familiar elements such as mobile devices, SMS messaging, and servers that a POSITA would have understood are amenable to various well-understood and predictable combinations, as I explain in further detail below. For example, common operating systems in commercially available mobile phones that I used by 2009 all had built in support for SMS messaging. See, e.g., Ex-1033 (describing the “revolutionary” iPhone that “redefines what users can do on their mobile phones” including “mak[ing] calls by simply pointing at a name or number,” “go directly to those messages” that the user wants to listen to and “immediately randomly access those messages that interest them most,” “easily send and receive SMS messages in multiple sessions,” “easily choose a photo ... to include in an email”); Ex-1030 (Nokia 3250 User Guide); Ex-1040 (Nokia 9300 User Guide). They also all had connections to servers that a POSITA would have been familiar with. For example, contacts, applications, photos and messages could all be stored on device storage. Graphical user interfaces allowed users to interact with applications for making phone calls, looking up contacts, sending messages, etc. And connections to servers were provided for browsing the web and sending messages among other things. These are all exemplified in the January 9, 2007

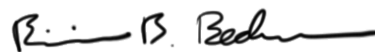
announcement of the Apple iPhone (Ex-1033) which includes a description of the camera and photo management application (which provided storage for photos and a graphical user interface), an SMS application, and a web browser, which a POSITA would understand worked by connecting to web servers. Furthermore, I recall during that demonstration of the phone at the time of the announcement that the web browser was shown connecting to the New York Times web server. As such, it would have been well within the skill of a POSITA to implement Levkovitz's embedded/customized advertisements and user-selectable operations into Munick'046's system. Ex-1009 ¶170; Ex-1010, ¶27.

## **XII. CONCLUSION**

240. For the reasons above, it is my opinion that Claims 1-2, 4-5, and 9 of the '949 Patent are obvious based on each of the grounds specified in my Declaration.

241. I declare that all statements made herein of my knowledge are true, and that all statements made on information and belief are believed to be true, and 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.

Date: November 30, 2023



---

Dr. Benjamin B. Bederson