

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

STODGE, INC. D/B/A POSTSCRIPT

Petitioner,

v.

ATTENTIVE MOBILE INC.

Patent Owner.

Case IPR2024-00069

Patent No. 11,416,897

**DECLARATION OF SAM MALEK, Ph.D.
IN SUPPORT OF PATENT OWNER'S PRELIMINARY RESPONSE**

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EXHIBIT LIST

Exhibit	Description
2001	Declaration Of Sam Malek, Ph.D.
2002	<i>Curriculum Vitae</i> of Sam Malek, Ph.D.
2003	Lex Machina, Motion Metrics Report for 543 orders issued by Magistrate Judge Christopher J Burke (CJB)
2004	<i>Attentive Mobile Inc., v. 317 Labs, Inc. d/b/a Emotive</i> , Case No. 1:22-cv-01163-CJB, Scheduling Order, Dkt. 29 (D. Del. Feb. 24, 2023)
2005	<i>Attentive Mobile Inc., v. Stodge Inc., d/b/a/ Postscript</i> , Case No. 1:23-cv-00087-CJB, Defendant Stodge Inc., d/b/a Postscript's Amended Answer and Counterclaims to Plaintiff's Complaint for Patent Infringement, Dkt. 50 (D. Del. Aug. 25, 2023)
2006	<i>Attentive Mobile Inc., v. Stodge Inc., d/b/a/ Postscript</i> , Case No. 1:23-cv-00087-CJB, Stipulation and Order Amending Schedule For Patent Infringement Counterclaim, Dkt. 74 (D. Del. Oct. 19, 2023)
2007	Lex Machina, U.S. District Court for the District of Delaware, cases between 2013-11-01 and 2023-11-07
2008	<i>Attentive Mobile Inc., v. Stodge Inc., d/b/a/ Postscript</i> , Case No. 1:23-cv-00087-CJB, Scheduling Order, Dkt. 20 (D. Del. Mar. 28, 2023)
2009	<i>Attentive Mobile Inc., v. 317 Labs, Inc. d/b/a Emotive et al.</i> , Case No. 1:22-cv-01163-CJB, Stipulation and [Proposed] Order to Modify Rule 16 Scheduling Order, Dkt. 52 (D. Del. Aug. 31, 2023)
2010	<i>Attentive Mobile Inc., v. Stodge Inc., d/b/a/ Postscript</i> , Case No. 1:23-cv-00087-CJB, Stodge Inc. d/b/a/ Postscript's Initial Invalidity Contentions (D. Del. July 27, 2023)

Exhibit	Description
2011	<i>Attentive Mobile Inc., v. 317 Labs, Inc. d/b/a Emotive</i> , Case No. 1:22-cv-01163-CJB, Defendant’s Initial Invalidity Contentions (D. Del. June 28, 2023)
2012	Press Release PR Newswire, <i>Attentive Co-Founder & CEO, Brian Long, Recognized as DMN 2019 40UNDER40 Award, Winner</i> (Aug. 6, 2019), https://markets.businessinsider.com/news/stocks/attentive-co-founder-ceo-brian-long-recognized-as-a-dmn-2019-40under40-award-winner-1028421503
2013	Sacra.com, <i>Attentive is a marketing tool for mobile messaging</i> , https://sacra.com/c/attentive/
2014	Eric Lambert, <i>Demystifying Text Marketing, Text-Based Support and “Double Opt-In”</i> , https://www.linkedin.com/pulse/demystifying-text-marketing-text-based-support-double-eric-lambert
2015	Michael Scheiner, <i>Attentive Gets the Message Out</i> (Feb. 27, 2020); https://crm.org/news/attentive-gets-the-message-out
2016	Patrice Hendriksen, <i>Attentive’s Compliance Features and Two-Tap Validated by Florida Federal Court</i> (Sept. 16, 2022), https://www.attentive.com/blog/attentives-compliance-florida-federal-court
2017	Abby Miller, <i>“DMN 2018 Award Winners”</i> (Jan. 25, 2019); https://www.dmnews.com/dmn-2018-award-winners/
2018	2021 Glossy Awards, <i>Best Use of SMS, Attentive and Supergoop!</i>
2019	The Tech Tribune, <i>2023 Best Tech Startups in NYC</i> , https://thetechtribune.com/10-best-tech-startups-in-nyc/
2020	Attentive Reviews & Product Details, https://www.g2.com/products/attentive/reviews

Exhibit	Description
2021	Business Wire, <i>Attentive Ranks #6 World's Best Software for 2023</i> ", (Sept. 27, 2023); https://www.businesswire.com/news/home/20230927658818/en/Attentive-Ranks-6-World%E2%80%99s-Best-Software-for-2023
2022	PRNewswire, <i>Attentive Ranked #8 on LinkedIn's 2020 Top Startups List in the United States</i> , (Sept. 22, 2020)
2023	The Cloud 100 (Aug. 8.2023); https://www.forbes.com/lists/cloud100/?sh=6a9a510e7d9c
2024	G2 Fastest Growing Products for 2022, https://www.g2.com/best-software-companies/2022/fastest-growing?rank=23
2025	<i>Attentive's 2022 Year to Date</i> , https://www.attentive.com/year-to-date-2022
2026	BusinessWire, <i>Attentive Named to the 2023 Deloitte Technology Fast 500™</i> (Nov. 8, 2023); https://www.businesswire.com/news/home/20231108028698/en/Attentive-Named-to-the-2023-Deloitte-Technology-Fast-500%E2%84%A2?blaid=5291542
2027	Forbes, <i>Buying Soap Was Just the Start, Now The Company Wants to Text You, Too</i> (Apr. 29, 2022); https://www.forbes.com/sites/laurendebter/2022/04/29/buying-soap-was-just-the-start-now-the-company-wants-to-text-you-too/?sh=2f7416521073
2028	Attentive, <i>Convert visitors into subscribers</i> ; https://www.attentive.com/growth
2029	Patent information for Attentive Mobile Inc., https://www.attentive.com/legal/patents

Exhibit	Description
2030	Attentive Debuts Signature "Two-Tap" Sign-Up Technology Within Instagram Stories; https://www.attentive.com/blog/attentive-instagram-stories
2031	Why SMS Marketing is The Way of The Future (plus, a spotlight on our friends at attentive®); https://www.sama-labs.com/why-sms-marketing-is-the-way-of-the-future-plus-a-spotlight-on-our-friends-at-attentive/
2032	Barry Levine, <i>Led by TapCommerce founders, startup Attentive launches SMS/MMS marketing platform</i> ; https://martech.org/led-tapcommerce-founders-startup-attentive-launches-smsmms-marketing-platform/
2033	Weetech Solution, <i>TapCommerce's founders are back with Attentive, a messaging startup that's raised \$13M</i> (Apr. 27, 2022); https://www.weetechsolution.com/blog/tapcommerce-founders-are-back-with-attentive
2034	U.S. Patent 10,366,400, <i>Reducing Un-Subscription Rates for Electronic Marketing Communications</i> , to Stephane Moreau et al., issued July 30, 2019
2035	U.S. Patent Appl., 2016/0140627 A1, <i>Generating High Quality Leads For Marketing Campaigns</i> , to Stephanie Moreau, et al., issued May 19, 2016
2036	Attentive, <i>Rethinking messaging-based customer communications</i>
2037	Attentive, <i>Text Message Marketing</i> , https://info.attentive.com/10xrevenue-email-marketing/
2038	<i>Attentive Mobile Inc., v. Stodge Inc., d/b/a Postscript</i> , Case No. 1:3-cv-00087-CJB, Joint Letter Brief, Dkt. 127 (D. Del. Jan. 29, 2024)

Exhibit	Description
2039	<i>Attentive Mobile Inc., v. 317 Labs, Inc. d/b/a Emotive</i> , Case No. 1:22-cv-01163-CJB, Joint Claim Construction Brief, Dkt. 70 (D. Del. Dec. 11, 2023)
2040	File History for U.S. Patent 11,416,887
2041	User-Agent, https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/User-Agent
2042	X-Forwarded-For, https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/X-Forwarded-For
2043	3GPP TS 23.040 V14.0.0 (2017-03), <i>3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Technical realization of the Short Message Service (SMS)</i> (Release 14); https://www.3gpp.org/ftp/Specs/archive/23_series/23.040/23040-e00.zip

I, Sam Malek, Ph.D., declare as follows:

1. I have been engaged by King & Spalding LLP on behalf of Attentive Mobile Inc. (“Patent Owner”), to provide this Declaration concerning the technical subject matter relevant to the petition for *Inter Partes* Review (“Petition”) of U.S. Patent 11,416,897 (“the ’897 patent”).

2. I am over 18 years of age. I have personal knowledge of the facts stated in this Declaration and could testify competently to them if asked to do so.

3. I have reviewed and am familiar with the specification and the claims of the ’897 patent. In general, I will cite to the specification of a United States patent using the following formats: (Exhibit No. Col:Line Number(s)) or (Exhibit No. Paragraph Number(s)). For example, the citation (EX-1001 1:1–10) points to the ’897 patent specification at column 1, lines 1–10. Also, for convenience, I use italics to denote limitations from the challenged claims.

4. All the opinions in this Declaration are based on the documents I reviewed and my knowledge, experience, training and professional judgment. In forming the opinions expressed in this Declaration, I reviewed the Petition for *Inter Partes* Review of U.S. Patent No. 11,416,897 and supporting exhibits.

5. I have been asked to provide my technical opinions regarding how a person of ordinary skill in the art would have understood the claims of the ’897 patent at the time of the alleged invention. I have also been asked to provide my

technical opinions on how concepts in the '897 patent specification relate to claim limitations of the '897 patent. In reaching the opinions provided herein, I have considered the '897 patent, its prosecution history, and the references cited herein and have drawn as appropriate on my own education, training, research, knowledge, and personal and professional experience.

I. QUALIFICATIONS

6. In formulating my opinions, I have relied on my knowledge, training, and experience in the relevant field, which I will summarize briefly. A more detailed summary of my background, experience, and publications is set forth in my curriculum vitae (CV), which is submitted as Exhibit 2002.

7. I have more than two decades of experience in the general area of computer and software technology in a variety of roles, including as a software engineer, software architect, and programmer at a variety of companies, as well as a researcher and professor at several universities.

8. I am currently a Full Professor of Software Engineering with tenure in the Informatics Department within the School of Information and Computer Sciences at the University of California, Irvine. I am also the Director of the Software Engineering and Analysis Laboratory ("SEAL"). My general research interests are in the field of software engineering, and to date my focus has spanned the areas of software analysis and testing, mobile computing, architecture and

design, and software dependability and security. The underlying theme of my research has been to devise techniques and tools that aid with the construction, analysis, and maintenance of largescale software systems.

9. I received my Ph.D. and M.S. degrees in Computer Science from the University of Southern California and my B.S. degree in Information and Computer Science from the University of California, Irvine. I have received numerous awards for my research contributions, including the Test of Time Award from the Association for Computing Machinery Special Interest Group on Software Engineering (2020), National Science Foundation CAREER award (2013), GMU Emerging Researcher/Scholar/Creator award (2013), and the GMU Computer Science Department Outstanding Faculty Research Award (2011).

10. I have authored over 120 peer-reviewed research publications. These publications have been highly cited (more than 10,000 times according to scholar.google.com). I have received numerous research grants from a variety of organizations, including the National Science Foundation (NSF), Federal Bureau of Investigation (FBI), Air Force Office of Scientific Research, Department of Homeland Security (DHS), National Security Agency (NSA), Defense Advanced Research Projects Agency (DARPA), Office of the Director of National Intelligence, and Army Research Office among others. Software systems and results produced in

my research lab have been adopted for use by various organizations in both private (e.g., Boeing, Bosch) and public (e.g., NASA, DHS, FBI) organizations.

11. I also have several years of experience as a software engineer, software architect, and programmer at a variety of companies, namely the Boeing Company, PricewaterhouseCoopers Consulting (later acquired by International Business Machines (“IBM”) Corporation), FieldCentrix, and Neural Computing Systems Lab. During my tenure in the industry, I gained professional experience in the design, development, and management of largescale software engineering efforts. Among the software systems that I designed and developed were commercial ecommerce and enterprise software systems. An important part of my responsibility in these projects was implementation and evaluation of security mechanisms to protect the resulting software systems from security attacks.

12. I have taught software engineering and computer science courses on a regular basis at the B.S., M.S., and Ph.D. levels at the universities where I have been employed. I have been a frequent speaker at scientific conferences, symposia, workshops, and gatherings of software engineering academics and professionals. I have served as chair, committee member, and reviewer for numerous software engineering journals, magazines, and conferences. I am currently on the editorial board of the ACM Transactions on Software Engineering and Methodology, the ACM Transactions on Autonomous and Adaptive Systems, and the Springer Journal

of Computing. I am a member of the Association for Computing Machinery (ACM), ACM Special Interest Group on Software Engineering (SIGSOFT), and the Institute of Electrical and Electronics Engineers (IEEE). I have testified at trial and deposition as an expert witness in numerous cases in the past five years.

13. My experience is highly relevant to the technologies at issue in this case and their application here. As set forth above, during my tenure in industry, I contributed to the design and development of several largescale enterprise and ecommerce software systems. For example, while working as a software engineer at FieldCentrix Computing in the late 1990s, I contributed to the development of a mobile application on Windows CE that was used by field technicians for tasks such as scheduling, dispatching, and invoicing from the field. Subsequently, while working as a software engineer at PriceWaterhouseCoopers Consulting, I participated in the development of several e-commerce applications that included web-based advertisement and marketing features.

14. My PhD dissertation and subsequent research work as a professor has highly focused on mobile application development, including methods for message-based communication. As part of my PhD dissertation, I developed a middleware called Prism-MW, which provides support for message-based (also known as event-based) communication among components comprising a Java-based mobile application. I published the results of this work in several articles, including one

entitled “Software Architecture Support for Handheld Computing”, which appeared in the IEEE Computer magazine in 2003. Since then, a significant thrust of my research at the university has been on mobile computing, from novel ways of constructing mobile apps with message-oriented communication structure to novel ways of validating their behaviors through testing. I have received numerous research grants to develop new technologies involving mobile applications. One of these grants was for a project that was funded by the Department of Homeland Security. The project aimed to validate the security implications of message-based communication among Android apps. My research group developed a novel tool, called Covert, that could effectively detect such threats through an accurate analysis of how messages generated from one app can be delivered to other apps, and ways in which such messages can be intercepted or modified by an attacker in the Android platform. The results of this work were published in a paper entitled “COVERT: Compositional Analysis of Android Inter-App Permission Leakage” in the IEEE Transactions on Software Engineering journal in 2015.

15. As part of the courses that I regularly teach at the University at both undergraduate and graduate levels, I cover topics that are directly related to the technologies at issue in this case including mobile application development, message-based communication model, deep linking techniques, and web technologies such as HTTP, URI, and JavaScript. As associate editor of several

journals and committee member of many conferences, I regularly evaluate the novelty of article submissions related to the technologies at issue in this case for publication in these venues. For instance, in the past I have been a co-organizer of several meetings of the International Workshop on Advances in Mobile App Analysis, and a program committee member of several editions of the IEEE/ACM International Conference on Mobile Software Engineering and Systems.

II. UNDERSTANDING OF RELEVANT LEGAL PRINCIPLES

16. I am not a lawyer, and I will not provide any legal opinions. Although I am not a lawyer, I have been advised certain legal standards are to be applied by technical experts in forming opinions regarding the meaning and validity of patent claims.

17. I understand that a patent claim is invalid if it is anticipated or obvious in view of the prior art, and that a claim can be unpatentable even if all of the requirements of the claim cannot be found in a single prior art reference. I further understand that invalidity of a claim requires that the claim be anticipated or obvious from the perspective of a person of ordinary skill in the art at the time the invention was made.

18. I have been informed that a patent claim is invalid if it would have been obvious to a person of ordinary skill in the art. In analyzing the obviousness of a claim, I understand the following factors may be taken into account: (1) the scope

and content of the prior art; (2) the differences between the prior art and the claims; (3) the level of ordinary skill in the art; and (4) any so called “secondary considerations” of nonobviousness if they are present.

19. I have been informed that a claim can be obvious in light of a single prior art reference or multiple prior art references. I understand that to prove that prior art or a combination of prior art renders a patent obvious, it is necessary to:

- 1) Identify the particular references that, singly or in combination, make the patent obvious;
- 2) Specifically identify which elements of the patent claim appear in each of the asserted references; and
- 3) Explain why a person of ordinary skill in the art would have combined the references, and how they would have done so, to create the inventions claimed in the patent. I further understand that exemplary rationales that may support a conclusion of obviousness include:
 - Combining prior art elements according to known methods to yield predictable results;
 - Simple substitution of known element for another to obtain predictable results;
 - Use of known technique(s) to improve similar devices (methods or products) in the same way;
 - Applying a known technique to a known device (method or product) ready for improvement to yield predictable results;

- “Obvious to try” – choosing from a finite number of identified, predictable solutions with a reasonable expectation of success;
- Known work in one field of endeavor may prompt variations of the work for use in either the same field or a different field based on design incentives or other market forces if the variations are predicable to a person of ordinary skill in the art; and
- Some teaching, suggestion, or motivation in the prior art that would have led a person of ordinary skill in the art to modify the prior art reference or to combine the prior art reference teachings to arrive at the claimed invention.

20. I understand that a patent composed of several elements is not proved obvious by merely demonstrating that each of its elements was, independently, known in the prior art. I further understand that one must identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.

21. I have been informed that, in considering obviousness, hindsight reasoning derived from the patent-at-issue may not be used.

III. STATE OF THE PRIOR ART

22. With the advent of Internet-connected mobile electronic devices, vendors acquired new ways of engaging mobile device users. (EX-1001 1:30-32.) For example, users reading an email or viewing a website might click or tap on their mobile device and be redirected to a vendor’s application or website. (EX-1001

1:34-41.) Once there, the user could select and purchase the vendor's products or services, as well as provide payment information to complete a transaction. (*Id.*) However, because this process required keeping the user's attention as they navigate the application or website (i.e., by clicking or tapping the screen)—and they had often paused their initial activity to be redirected—many users left the purchase before the transaction could be completed. (*Id.*)

23. Accordingly, an improved method for transitioning a user from one interface to another interface on a mobile device to complete, for example, a subscription, communication, and/or purchase, while still maintaining and improving a user's experience and engagement, was needed. (EX-1001, 1:42-46.)

IV. THE '897 PATENT

A. Summary Of The '897 Patent

24. The '897 patent discloses an improved technology platform and method for completing messaging-based subscriptions, communications, and/or purchases that a user initiates from a website viewed on a mobile device. (EX-1001, 2:51-61, 1:24-29, 7:53-61.) While the '897 patent enabled the use of “two-tap signup” across a variety of transactions, the challenged claims specifically recite the application of the patented technology within the context of a text message subscription service, enabling the ability to enroll a user without the need for further opt-in communications. (*E.g.*, EX-1001 10:50-54, cls. 15, 24, 6:60-7:23, Figs. 2A-2D.)

25. The '897 patent discloses a platform that may be implemented across a network having three parties: a click-to-text server, client server, and user mobile device:

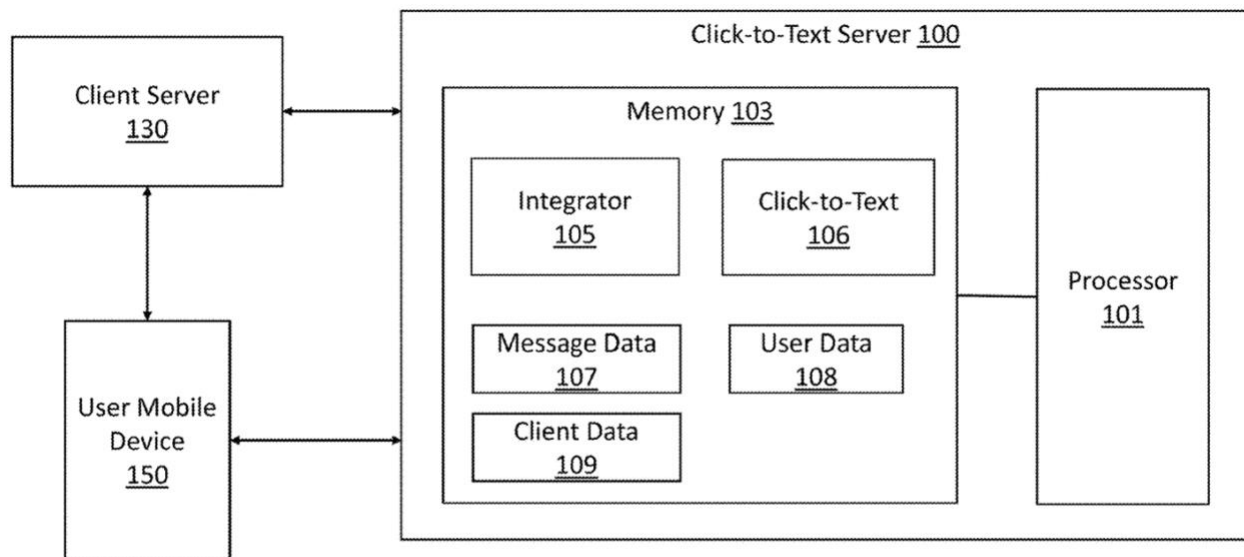


FIG. 1

(EX-1001 Fig. 1, 4:46-50.) The '897 patent describes one embodiment of a click-to-text server as a device capable of executing a “click-to-text process.” (EX-1001 4:65-5:40.) A client or vendor involved in Internet promotional activities serves a webpage that the user may load on their mobile device. (EX-1001 5:66-6:8, 6:60-7:2, cls. 15, 24.)

26. The click-to-text server sends a means for displaying, e.g., an integration tag, to the client server, such that the client server may serve a hosted webpage. (EX-1001 5:29-32, 11:54-12:38, cls. 15, 24.) For example, an “integration tag” may contain code representing “integrator instructions” or

instructions which cause the executing device to send a request to the click-to-text server and receive the client's promotional message. (EX-1001 5:29-36.)

27. The '897 patent teaches that when the user's mobile device loads the webpage in a mobile application, e.g., a browser, and the integration tag is executed, the tag will additionally cause the mobile device to send user data to either the client server or the click-to-text server. (EX-1001 8:8-19, 12:46-56, cls. 15, 24.) For example, a user identifier may be provided, such as a phone number, such that the click-to-text server can authenticate the user by, e.g., determining whether the user is on a blacklist (to be blocked) or whitelist (permitted) associated with the client. (EX-1001 8:19-33.) The click-to-text server might alternatively or additionally determine, based on the user identifier, whether the user is a new or existing subscriber of the client to better customize the server's response to the user. (EX-1001 8:39-54.)

28. In order to achieve improved user experience and engagement, the '897 patented invention employs several key techniques within its "two-tap" method—i.e., a method in which a subscription process can be initiated and completed by two screen taps—to switch the user from, e.g., a mobile website or application to a subscription message on a mobile messaging application. (EX-1001 2:66-3:3, 3:19-31.) In particular, the patent discloses a "custom-generated mobile deeplink." (EX-1001 3:4-18.) For example, the click-to-text server may define and send a means

for causing the mobile device to transition from a first application to a messaging application, e.g., a uniform resource identifier (URI). (EX-1001 cls. 15, 24.) That is, the means causes the device to automatically transition to a messaging application and auto-populate a custom message to the click-to-text server. (EX-1001 cls. 15, 24, 8:65-9:10, 10:22-42.) The message may include an address for the server, as well as a message body having an identifier associated with the webpage or the user data. (EX-1001 3:31-48, 8:65-9:10, 15:38-42.)

29. Accordingly, the patented technology platform may be used to implement a “two-tap” enrollment in a text messaging subscription service and to deliver an installment of the text message subscription service without requiring any further user interaction after sending the text message. (EX-1001, 2:66-3:3, 20:53-57, cls. 15, 24.) In this way, the ’897 patent improves a user’s experience while shopping and interacting with a client’s webpage on their mobile device and increases user engagement with the client’s promotional messaging and marketing efforts. (EX-1001 20:57-63.)

B. Claim Construction

30. I understand that Petitioner has proposed the following constructions of two claim terms:

Claim Term	Petitioner's Construction Proposed in Petition:
“means for displaying...” (cl. 15)	Structure: “an integration tag configured to cause performance of the claimed functions” Function: “displaying an invitation to subscribe to a text messaging subscription service via a first application”
“means for causing...” (cl. 15)	Structure: “a URI deeplinking to a messaging application and configured to cause performance of the claimed functions” Functions: “(1) ‘transition...to a second application’ and (2) to ‘automatically populate a custom text message...’”

(Petition 19-20.)

I further understand that in the district court claim construction proceedings, the parties did not dispute that these terms are means-plus-function terms and did not dispute the claimed functions as recited in the claims.¹ (EX-2039 26-34, 43-47.)

¹ I note that Petitioner's construction appears to paraphrase the recited functions in the claims. But I understand Petitioner to be making the same argument here that it is at the district court—i.e., that the corresponding function for “means for causing” is “causing (1) the mobile device to transition from the first application to a second application different from the first application in response to the mobile device detecting a first interaction with the invitation, the second application being a

However, I understand that the parties did dispute the scope of the corresponding structure:

Claim Term	Patent Owner’s Proposed Structure:	Petitioner’s Proposed Structure:
“means for displaying...”	“a tag configured to cause the claimed functions”	“an integration tag configured to cause performance of the claimed functions”
“means for causing...”	“a link configured to cause the claimed functions”	“a URI deeplinking to a messaging application and configured to cause performance of the claimed functions”

31. At this time, the distinctions between the parties’ positions on the specific structure required by these means-plus-function terms are irrelevant to the prior art distinctions I discuss below, since none of the prior art discloses anything that performs the undisputed function recited in the claims. (EX-1001 cls. 15, 24.)

32. Consistent with the above understanding of the recited functions, I apply the plain and ordinary meaning of all claim terms.

messaging application, and (2) the second application to automatically populate a custom text message based on the user data.” (EX-2039 26.)

C. Level Of Ordinary Skill In The Art

33. I understand that certain issues relating to the validity of the '897 patent must be judged from the perspective of a person of ordinary skill in the relevant art, as I discuss below. I have been asked to define the level of a “person having ordinary skill in the art” or “POSITA” that someone would have had at the time the alleged invention as claimed was made. In deciding the level of ordinary skill, I have considered the following factors, which I have been informed are relevant in determining the level of ordinary skill in the art:

- The levels of education and experience of persons working in the field;
- The types of problems encountered in the art;
- The prior art solutions to these problems;
- The rapidity with which innovations are made; and
- The sophistication of the technology.

34. A POSITA at the time of the invention of the '897 patent (May 2017) would have had a bachelor's degree in an accredited program of computer science, computer engineering, electrical engineering, or a similar discipline, and have 2-3 years of practical work or research experience in mobile and web application programming. More advanced degrees and/or training in a related discipline can compensate for shorter work experience.

35. I understand that Petitioner's expert, Dr. Houh has defined the level of ordinary skill in the art as:

In my opinion, a PHOSITA in the relevant timeframe would have had a Bachelor's Degree in computer science and three years of experience in Web-based programming methods, where a higher level of education may substitute for experience and vice-versa.

(EX-1002 44-45.)

36. Despite minor variations in these two positions, these variations would not alter my opinions expressed in this Declaration.

37. Based on either standard, I was at least a person of ordinary skill in the art at the time of the invention of the '897 patent.

V. OVERVIEW OF PRIOR ART

A. Overview Of Oliver

38. Oliver is directed to a system and method for "creating a passive entity" that, when scanned or read, generates a prepopulated message on a user's communication device requesting a link to a promotional reward. (EX-1011 [0002].)

39. Oliver defines "passive entities" as "images, codes, tags, or any other unique identifiers that may be encoded with uniquely identifying information and codes." (EX-1011 [0007].) When describing how the "passive entities" are used in practice, Oliver uses the term interchangeably with "generated sign." (EX-1011

Abstract, [0033].) Although Petitioner describes these “passive entities” as something “that contains [a] link” and/or “essentially anything with which a mobile device can interact,” my understanding of Oliver does not support such a broad reading. (Petition 29; EX-1011 Abstract, [0007], [0033], [0035], [0027]-[0029].)

40. Oliver specifically identifies these entities as *passive*. The examples Oliver identifies in its specification are consistent with this understanding. (See EX-1011 [0007], [0003] (identifying a QR code, near-field communication (NFC) tag, radio frequency identification (RFID) tag, or short message service (SMS) message).) For example, Oliver points most often to a QR code containing encoded data. (EX-1011 Fig. 1, [0007].) Unlike an interactive link, which requires that the user actually select or click the link, Oliver teaches that a user may activate a “passive” entity by simply gathering the data from the entity. (EX-1011 [0033].) Specifically, Oliver states that users “activat[e]” a passive entity by “scanning, reading, or otherwise **inputting the unique information contained in the passive entity into a device** operated by the user” or by merely being present near a passive entity while equipped with a passive entity receiver. (EX-1011 [0007].)

41. Oliver laments the fact that, while many businesses use “passive entities or identifiers...as a means of presenting promotions for their products and services,” such prior art use was limited to placing passive entities “on promotional displays and items as a means to navigate a consumer to a particular place in the digital

world.” (EX-1011 [0003].) Oliver explains that businesses which created the passive entity “may not even know that anyone has taken an action towards activating one of their passive entities.” (EX-1011 [0003].)

42. Accordingly, Oliver discloses a “lead generation tool” used to create a passive entity (e.g., QR code or sign). (EX-1011 [0007].) When the user activates the passive entity, the user is prompted to send a message in order to obtain a link to a reward—i.e., something of value to the user. (EX-1011 [0007], [0026], [0040]-[0042], Figs. 5-6, 8-10.) Oliver teaches that a responsive message is generated for that user that contains one or more links to the reward and that, in particular, these links are “trackable parameterized links to web application,” which allow the business to track user engagement with the link:



(EX-1011 Fig. 10 (excerpted).) That is, to obtain the benefit of Oliver—i.e., tracking user engagement with passive entities and engaging in a one-time exchange of information with potential customers—Oliver’s method requires three interactions from the user: (1) activating the passive entity; (2) sending a message to the web

application; and (3) selecting the link that is returned by the web application to obtain the promised reward. (EX-1011 Figs. 5-6, [0039]-[0042].)

B. Overview Of Agrawal

43. Agrawal discloses a method for determining whether interactions with an online advertising link are legitimate or the result of malicious activity. (EX-1005 Abstract, Figs. 3, 5.)

44. Agrawal discloses an environment in which the user's web browser is presented with an advertising link:

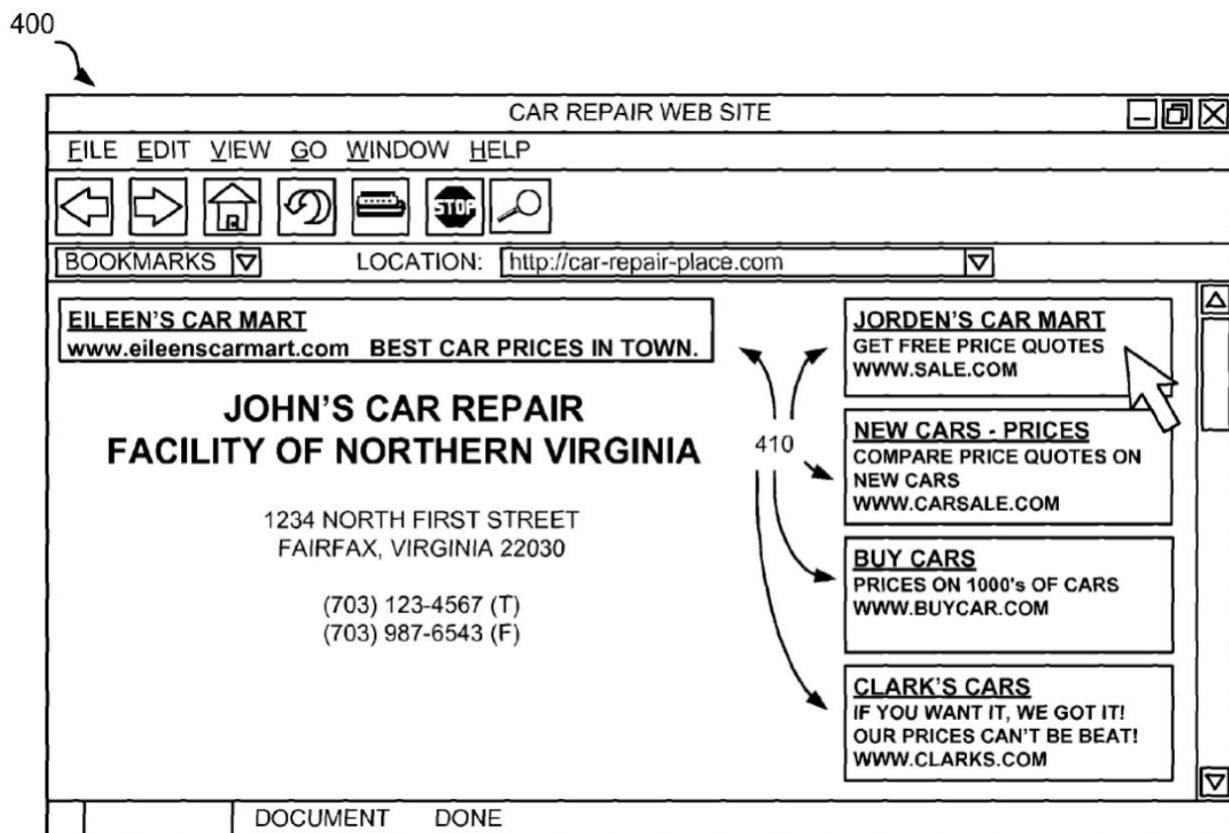


FIG. 4

(EX-1005 Fig. 4, 1:18-25.) Agrawal defines these advertising links as links which cause—when selected or clicked—the user's web browser “to visit a web page

belonging to the advertiser associated with the advertising link.” (EX-1005 1:18-25.)

45. Agrawal explains that on-line advertising systems often track impressions (i.e., presentation of a link to a user) and clicks to calculate advertising charges. (EX-1005 1:26-33.) Since many advertising systems will charge companies a pre-determined fee for each click or impression associated with an advertisement, more clicks/impressions result in higher advertising fees. (See EX-1005 1:34-39.) One of the vulnerabilities of such a system, which Agrawal seeks to address, is that malicious individuals may seek to artificially inflate the click count or impression count associated with a company’s advertising link. (EX-1005 1:39-46.) Agrawal teaches that individuals or “click-bots” can mimic real network traffic by continually causing the advertising link to be displayed and clicking on the link, such that a company may be charged for clicks or impressions that do not correspond to legitimate (or real) users. (EX-1005 1:42-54.)

46. Accordingly, Agrawal discloses a method for determining whether interactions with an online advertising link are legitimate or the result of malicious activity. (EX-1005 Abstract, Figs. 3, 5, cl. 1.) Agrawal accomplishes this determination through the collection and comparison of information associated with a user’s interaction with web-based links. (See, e.g., EX-1005 cl. 1.)

47. For example, Agrawal teaches that when a user requests a webpage, an “advertisement query request” is generated, requesting advertising links to populate the webpage. (*E.g.*, EX-1005 5:45-6:46.) The server may collect a first group of information associated with this first request. (*See id.*) Agrawal teaches that when a user selects one of the advertising links contained in the webpage, an “advertisement click request” is generated. (*E.g.*, EX-1005 6:47-7:44.) Here, a second group of information associated with this second request is collected. (*See id.*) Agrawal teaches that such information may, for example, be obtained via the user’s browser, but that regardless of how the information is collected, it is sent by Hyper Text Transfer Protocol (HTTP) to the server as part of the request. (EX-1005 5:64-6:46.)

48. The critical step in Agrawal’s method is the comparison of these two sets of information. (EX-1005 7:45-62.) A discrepancy in the information gathered at the time of the advertisement query request and the information gathered at the time of the advertisement click request indicates illegitimate advertising activity, whereas a match suggest legitimate activity. (EX-1005 7:63-8:12.)

49. Agrawal also discloses a similar but slightly alternative method in which legitimate information is collected over a period of time to generate and store a distribution of that information. (EX-1005 9:29-40.) A distribution is then generated over predetermined intervals and compared to the stored distribution, such

that a match within a certain threshold indicates legitimate advertising activity. (EX-1005 9:40-55.)

50. By collecting and comparing this information, Agrawal teaches that engagement with web-based advertising links may be determined to be legitimate or illegitimate and that, based on this determination, advertising fees may be adjusted to ensure accuracy. (EX-1005 8:59-60, 9:56-58.)

C. Overview of Molinet

51. Molinet recognizes that many users' mobile phones (i.e., client devices) contain a variety of different applications, often unable to communicate with one another, leading to a messy "application ecosystem." (EX-1009 [0005].) In particular, Molinet distinguished these application ecosystems from Internet hyperlinks, explaining that unlike "hyperlinks on the Internet, each application on the client device is unable to easily link to a section of another application on the client device through the application installation process....especially in the case where the other user does not have the application installed on his or her client device." (*Id.*) Thus, where a server receives a request from a client device associated with a deep link, Molinet saw a need for an improved method of responding to that request, regardless of the type of client device and regardless of whether the application was installed on the client device. (EX-1009 Abstract, [0005].)

52. Molinet therefore discloses a method in which a user's interaction with a "contextual deep link" causes a contextual deep linking (CDL) server to determine "contextual information" about the user's device, thereby allowing the server to generate a contextually appropriate response. (*See generally* EX-1009 [0017]-[0018], [0025]-[0026].)

53. One example of a contextual deep link that Molinet provides is a URL in the format "http://link-provider.com/[application identifier]/[unique identifier]." (EX-1009 [0026].) "In this example, 'link-provider.com' is the domain name associated with the entity performing the operations coordinating the contextual deep linking"—e.g., a CDL server. (*Id.*) "The '[application identifier]' is a unique character string identifier that identifies the application in question" and "[t]he '[unique identifier]' is another unique character string identifier that identifies the particular link." (EX-1009 [0026].)

54. When a user interacts with the contextual deep link, a request is made to the server, and the server must determine the "contextual information" for the client device in order to be "able to send a contextually valid response to the client device." (*See* EX-1009 [0017], [0026].) Molinet discloses a variety of contextual information—for example, the device platform (e.g., mobile or desktop), the type and version of the operating system executing on the client device, whether the application is installed on the client device, etc. (EX-1009 [0025].) When a user

interacts with a contextual deep link, Molinet teaches that the CDL server will check the client device for a stored indicator that a fingerprint has already been generated for that user's client device. (EX-1009 [0017].) Where an indicator is present, the server is able to look-up the matching fingerprint in its local storage and retrieve the corresponding contextual information for that client device. (*Id.*) Where an indicator is not present, the server generates a unique fingerprint and determines the contextual information of the user's request based on characteristics of that device. (*Id.*) For example, contextual information may be determined based on characteristics including "the IP address, operating system version, hardware identifier, operating system provided identifier," etc. (*Id.*)

55. By determining the contextual information, Molinet discloses a method equipped to handle a variety of scenarios—e.g., (1) where the client device does not support an application ecosystem; (2) where the client device supports an application ecosystem but does not have the specified application installed; or (3) where the device supports an application ecosystem and has the specified application installed.

56. In the first instance, where contextual information indicates that the client device does not support an application ecosystem (e.g., a desktop computer or particular operating system), Molinet teaches that the CDL server will respond to the user's interaction with the link by redirecting the client device's web browser to

a landing page introducing the application. (EX-1009 [0087]-[0088].) In the second instance:

[I]f the user is using a mobile device that supports a mobile application ecosystem, the server may detect this contextual information and respond with a redirection to the application store on the user's client device [] if the user does not have installed the application referenced in the link.

(EX-1009 [0026].)

57. And finally, where contextual information does indicate the specified application is installed, Molinet teaches that the CDL server's response "may initiate an application on the user's client device, which submits a request to the [CDL] server for link data associated with any recently used contextual deep links." (EX-1009 [0046].) The CDL server once again "matches the fingerprint provided by the application with a fingerprint associated with a contextual deep link and sends the associated link data to the application, which can then be used to configure the application." (EX-1009 [0046].) Molinet describes this configuration as "simply a reference to a location in an application [], such as a section within the application." (EX-1009 [0024].) "For example, a particular location in a crowd-sourced review application may be a review page for a local restaurant." (EX-1009 [0024].)

58. Molinet does not disclose or teach configuration of a messaging application, specifically. (*See generally* EX-1009.)

59. The '897 patent acknowledged known prior art methods similar to Molinet—*i.e.*, methods which “allow a user to open a vendor’s application or a vendor’s website on a mobile device,” where the user had the option of completing a transaction. (EX-1001 1:30-34.) The '897 patent explains that the disadvantage of such a method is that it typically involves further user input (e.g., clicks, or screen taps) to provide information or payment and complete the transaction. (EX-1001 1:34-39.) “This time-consuming and burdensome process results in many users leaving the purchase before the transaction is complete.” (EX-1001 1:39-41.)

VI. GROUNDS 1-2 DO NOT DISCLOSE OR RENDER OBVIOUS ALL LIMITATIONS OF THE INDEPENDENT CLAIMS

60. I understand that Petitioner and its expert, Dr. Henry Houh, allege that a combination of Oliver, Agrawal, and Molinet renders obvious every limitation of the independent claims 15 and 24, and this three-reference combination underlies their challenge of the remaining dependent claims under Grounds 1-2.

Ground 1	Section 103(a)	Obvious over Oliver in view of Agrawal and Molinet	Claims 15-19, 21-30
Ground 2	Section 103(a)	Obvious over Ground 1 in further view of <i>Ad Serving Technology</i>	Claims 15-30

61. I disagree with the arguments in the Petition and the opinions set forth by Dr. Houh for at least the reasons that I discuss in further detail below.

A. A POSITA Would Not Have Been Motivated To Combine The Teachings of Oliver, Agrawal, and Molinet

62. A POSITA would not have been motivated to combine the teachings of Oliver, Agrawal, and Molinet for the reasons Petitioner asserts. Petitioner asserts that it would have been obvious: “to implement Oliver’s business method by presenting Web links in Internet ads, using an ad system such as Agrawal’s, and to augment such an ad system with Molinet’s techniques to deeplink to mobile applications.” (Petition 28.) But Petitioner’s rationale for such a combination fails to acknowledge the distinct environments and goals across these references, as well as the explicit teachings of these references that prohibit such a combination.

63. **Oliver and Agrawal.** Petitioner’s first rationale for combining Oliver and Agrawal is based on its understanding that Oliver’s method allegedly provides “a streamlined method for acquiring the contact information of potential customers, and for acquiring the potential customer’s consent to receive marketing communications and proof of possession of the mobile device.” (Petition 28.) This assertion misstates Oliver.

64. Oliver does not disclose acquiring consent to receive marketing communications or proof of possession of a mobile device. For example, the disclosure of Oliver cited by Petitioner merely explains that contact information may be obtained during the application of Oliver’s method, such that a meaningful communication may take place between the person and the business. (See EX-1011

[0009].) But Oliver discloses a method by which a user activates a passive entity as a one-time opt-in to receive a responsive message with a link (or links) to a reward. (See Section V(A), *supra*; see also, e.g., EX-1011 [0008] (returning a single response to the user containing the promotional reward or other information to the user), [0030] (describing the method “for providing a promotional reward to a user [] via a response message, in accordance with the disclosed principles”).)

65. Oliver does not discuss acquiring consent for future communications. It also does not discuss obtaining proof of possession of a mobile device, particularly since Oliver discloses a variety of passive entities that may not involve a mobile device at all. (See EX-1011 [0003].)

66. Indeed, Oliver teaches that in order to receive any further messages or promotional rewards, the user would have to activate a passive entity and repeat Oliver’s process again. (See EX-1011 [0045].) For example, Oliver teaches that the disclosed method can register (and limit) the specific number of scans by the same user activating the same passive entity—indicating that each scan will result in a singular promotional reward and that to obtain multiple rewards or responsive messages, a user must repeatedly activate a passive entity. (*Id.*) This understanding of Oliver’s method is consistent with Oliver’s purpose—i.e., enabling businesses to track where someone “has taken an action towards activating one of their passive entities.” (See EX-1011 [0003].) Oliver even discloses a “use token” which may be

generated and added to the reward URL link that is provided in the responsive message back to the user. (*Id.* [0045].) The token “will ensure that a given reward is only accessed once for every scan.” (*Id.*)

67. Petitioner’s own arguments indicate a similar understanding of Oliver’s intended purpose. For example, Petitioner argues that a POSITA “would have found Agrawal’s authentication system advantageous to carry out *Oliver’s express desire to ... impose limits on the user’s access to promotions.*” (Petition 29.) Imposing limits on the user’s access to promotions is the exact opposite of obtaining consent for future marketing communications.

68. Petitioner’s second rationale for combining the teachings of Oliver and Agrawal is not actually a rationale at all. Petitioner argues that “[t]o make use of Agrawal in Oliver’s business method, a PHOSITA would have found it obvious to use the concept of mobile app deeplinks that pre-populated text messages (like Oliver’s) as links (e.g., links 410) in Agrawal’s web ads.” (Petition 29.) Petition does not actually explain *why* a POSITA would have found such a combination obvious—rather, Petitioner mostly just describes the alleged similarities between Oliver and Agrawal. (*See* Petition 29.)

69. Moreover, it would not have been obvious to a POSITA to combine these references as Petitioner suggests. As a preliminary matter, Oliver does not use the term “mobile app deeplinks” or even “deeplink,” and Petitioner does not explain

or support its assertion. Oliver discloses a method implemented in passive entities—e.g., QR codes, Near-Field Communication (NFC) tags, Radio Frequency Identification (RFID) tags, Short Message Service (SMS) messages “used on promotional displays and items as a means to navigate a consumer to a particular place in the digital world.” (EX-1011 [0003].) Whereas Oliver discloses encoding information into these passive entities, e.g., a QR code, Agrawal discloses hyperlink or URL-based advertisements. (*Compare* EX-1011 [0027]-[0029] *with* EX-1005 Abstract, Fig. 4, 3:46-58, 8:13-37.) That is, Oliver and Agrawal disclose wholly different operating environments.

70. For example, Agrawal’s web-based environment relies on web-based protocols to achieve its intended purpose. (*See* EX-1005 1:19-26; *see also* Section V(B), *supra*.) Agrawal discloses a method of verifying advertising activity by collecting and comparing information obtained via the client’s web browser, which exchanges information with a server via the Hyper Text Transfer Protocol (HTTP). (EX-1005 6:30-43, 6:14-18; *see also id.* 5:29-6:67, Fig. 3.) In contrast to Agrawal, however, Oliver’s method for activating a passive entity in order to send an SMS message does not involve a web browser or an exchange of information with a

server.² (*See generally* EX-1011; *e.g.*, *id.* cl. 1; Section V(A), *supra.*) Oliver teaches that activation of a passive entity will open the SMS client on the mobile device—which does not result in a HTTP request. (EX-1011 [0005]-[0006], [0026]-[0029].) That is, unlike Agrawal, which is explicitly reliant on web-based communication protocols, Oliver is explicitly reliant on distinct phone-based messaging protocols.

71. Agrawal teaches:

[W]hen the user requests access to document **400**, an advertisement query request may be generated to retrieve advertising links **410** for document **400**. In addition, a combination of browser information, client information, and/or user information may be collected. Assume, for explanatory purposes, that the following combination of information is collected—that the browser being used is Netscape, that the browser has java enabled, that the time zone in which client **110** is located is the Eastern time zone, and that the IP address is 100.100.10.10.

(*See* Ex 1005 8:28-37.) Agrawal teaches that when an advertising link is selected, an advertising click request is generated and sent to the server to report the selection

² Note that while Oliver discloses a user interacting with the URL provided in the responsive message via a browser, this takes place only after the user has activated a passive entity, sent a message, and received the responsive message with reward link. (*E.g.*, EX-1011 [0042]-[0043].)

of the advertising link, and that the same type of information is collected from this request. (See Ex 1005 8:38-49.) The two sets of browser information, client information, and/or user information are then compared to determine if they do not match, which could indicate an illegitimate advertising activity. (See Ex 1005 8:50-60).

72. A POSITA would have understood that the information collected in Agrawal is contained in the HTTP header of an HTTP request object, because a POSITA would be familiar with web protocols, including HTTP. HTTP header contains information that among others allows a server to identify the browser type and version (EX-2041) and the IP address of a client. (EX-2042.) The HTTP header also contains information about the time zone in which a client is located. (EX-2041.)

73. Unlike Agrawal, Oliver teaches a system where the user sends Short Message Service (SMS) text messages. SMS protocol is fundamentally different from HTTP protocol. First, it does not run on top of TCP/IP protocol layers, therefore, an SMS message does not have an IP address. Second, it does not contain any information about the client browser type and version, because SMS messages are not sent by browsers. (EX-2043.) Naturally, it contains no information about whether the browser supports java.

74. A POSITA would have been familiar with HTTP and SMS at the time of invention and would have readily realized that Agrawal's method of detecting illegitimate advertising activity targets web-based traffic running on HTTP, which allows the kind of information needed by Agrawal's system to be collected. A POSITA would have realized Agrawal's allegedly inventive method is not compatible with SMS-based communications occurring over cellular networks.

75. Moreover, Oliver does not disclose two interactions with a server. In Oliver, the QR code directly instructs the mobile device to open the SMS message and prepopulates a ready to send text message. (See EX-1011, Fig 8.) The text message is then sent to a pre-populated phone number or a shortcode (which is just a short telephone number, like 911), and not a server. (See EX-1011, Fig 8.) Therefore, in Oliver, there are no two sets of information that can be collected by a server to allow Agrawal's system to be applied. For this additional reason, a POSITA would have realized Agrawal and Oliver are incompatible and cannot be combined.

76. The criticalness of this distinction is clear—even Petitioner admits that “a PHOSITA would have understood that mobile-app deeplinking protocols could differ between mobile operating environments.” (Petition 29-30.) Here, the distinction is not even limited to a mere difference between *mobile* operating environments; rather, Agrawal is directed to a web-based environment and an advertising verification method reliant on web-based protocols, whereas Oliver is

not. Accordingly, a POSITA would not be motivated to combine their teachings in the asserted way. Furthermore, as I will discuss in more detail with respect to one of the limitations below, attempting to combine the references' teachings in such a way would render Agrawal non-functional, further discouraging the combination in the first place. (See Section VI(C)(1), *infra*.)

77. **Agrawal and Molinet.** Petitioner's asserted combination that "augment[s]" Agrawal's system with Molinet's teachings (Petition 29-31) fails due to a critical misunderstanding of Molinet. Petitioner asserts that a POSITA would be motivated to implement Molinet's method in order "to allow apps to use and manipulate links easily, independent of context," particularly where "mobile-app deeplinking protocols could differ between mobile operating environments." (Petition 29-30.)

78. However, Agrawal does not disclose an environment supporting an application ecosystem. (See *generally* Section V(B), *supra*; EX-1005.) Molinet describes an application ecosystem on client devices, in which users can easily add functionality to their device by installing new applications, e.g., from an application store. (EX-1009 [0005].) Molinet explicitly distinguishes between client devices which support an application ecosystem and client devices which do not support an application ecosystem. (EX-1009 [0018].) Specifically, Molinet explains that where the contextual information for the client device indicates that an application

ecosystem is not supported (e.g., a desktop computer), the server will respond by “caus[ing] the client device to open a landing page on a web browser with more information about the application.” (EX-1009 [0018], [0087]-[0088].) That is, Molinet’s teachings of transitioning a user to an application store to install an application or to an application are applicable only in an environment supporting an application ecosystem. (*See id.*; Section V(B), *supra.*)

79. Agrawal does not disclose a wireless device with an application ecosystem. (*See generally* EX-1005.) Figure 4, for example, depicts a typical screen view from a desktop computer. (EX-1005 Fig. 4.) Accordingly, were a POSITA to implement Molinet’s method within Agrawal’s environment, Molinet explicitly teaches that when a user interacts with a contextual advertising link, he will be transitioned to a landing page on the web browser, rather than another application. (EX-1009 [0018], [0087]-[0088].) Accordingly, contrary to Petitioner’s assertion, a POSITA would not be motivated to augment Agrawal in view of Molinet in order “to allow apps to use and manipulate links easily.” (Petition 29-30.) And any combination would require a substantial redesign of at least one of the references.

80. **The Asserted Combination.** As to the combination of all three references, Petitioner asserts that such a combination would have been “the application of known techniques (Molinet and Oliver), for their known functions, in order to improve Agrawal, with no unpredictable results.” (Petition 31-32.) While

Petitioner's statement lacks specificity as to any particular technique, function, or improvement, for the reasons I discussed above, Molinet and Oliver are clearly not being used for their disclosed techniques. For example, Oliver discloses a method in which a user activates a passive entity and sends a message to trigger a one-time responsive message with a trackable reward link. (Section V(A), *supra*.) But Petitioner's combination relies on a greatly modified application of Oliver's teachings in an environment lacking passive entities and to purportedly allow for multiple transactions where Oliver teaches a limited transaction. (Petition 28-32.) As another example, Molinet discloses a method that would direct a client device to a landing page in the web browser—not an application—where the client device does not support an application ecosystem. (EX-1009 [0018], [0087]-[0088].) Yet, Petitioner's combination ignores this explicit teaching without discussion, and asserts a different result when Molinet is implemented within Agrawal—an environment lacking an application ecosystem. (Petition 28-32.)

81. Based on the above distinctions, Agrawal cannot be improved to attain the benefits alleged by Petitioner. Rather, the asserted combination would strip Oliver of its inventive aspect—generating passive entities that lead the user to a trackable reward link, because the combination would no longer be applicable to passive entities and would no longer return a responsive message to users with the trackable link. Alternatively, the asserted combination would prevent Agrawal from

verifying advertising activity, because Agrawal relies on web-based messaging protocols to collect the information necessary to verify the activity, but Oliver bypasses any server or making any web-based request by using phone-based messaging protocols. And the majority of Molinet’s teachings that are specific to client devices supporting an application ecosystem would be irrelevant to Agrawal. Accordingly, a POSITA would not be motivated to combine the references’ teachings.

82. Finally, Petitioner’s generic assertion that a POSITA would combine the functionalities of all three references into a single server, merely because each reference “provides functionality with a server” (Petition 31) fails to take into consideration the distinct operating environments and Molinet’s explicit teachings as to how its method would be implemented in different environments, which I have discussed above.

B. No Combination of Oliver, Agrawal, and Molinet Renders Obvious A Text Messaging Subscription Service

83. None of Oliver, Agrawal, and Molinet—either alone or together—discloses or renders obvious a subscription service or list.

84. The ’97 patent recites several limitations relating to a text messaging subscription service:

Claim Limitation	Claim Language
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Cl. [15b]; see also cl. [24a].	<i>send, from at least one server and to a mobile device requesting and/or [loading] a webpage, means for displaying an invitation to subscribe to a text messaging subscription service...</i>
Cl. [15c]; see also cl. [24d]	<i>send from the at least one server and to the mobile device, means for causing...in response to the mobile device detecting a first interaction with the invitation...</i>
Cl. [15f]; see also cl. [24f]	<i>deliver an installment of the text messaging subscription service without receiving an opt-in communication after receiving the custom text message.</i>

85. As a preliminary matter, I am aware that Petitioner and Petitioner's expert Dr. Houh both opine that limitation [15b]/[24a] constitutes "printed matter that is unrelated to the technical function of the alleged invention" and, as such, is non-limiting. (Petition 38, 63; EX-1002 68, 100.) For purposes of this declaration, I have assumed that limitation [15b]/[24a] is limiting. However, regardless of the Board's determination regarding this issue, my conclusion would not change, because the asserted prior art also does not disclose or render obvious limitation [15f]/[24f].

86. As to limitation [15b]/[24a], Petitioner asserts it would have been obvious to display an invitation in Agrawal to subscribe to a text messaging subscription service based on Oliver's disclosure of "promotional information"

(Petition 37) and that as to limitation [15f]/[24f], Oliver's one-time responsive message containing one or more reward links is allegedly "an installment of a text messaging subscription service." (Petition 52-53.)

87. Agrawal discloses only webpage-based advertising links that transfer a user to another webpage. (EX-1005 1:18-26; Section V(B), *supra*.) Figure 4 illustrates a view of these links:

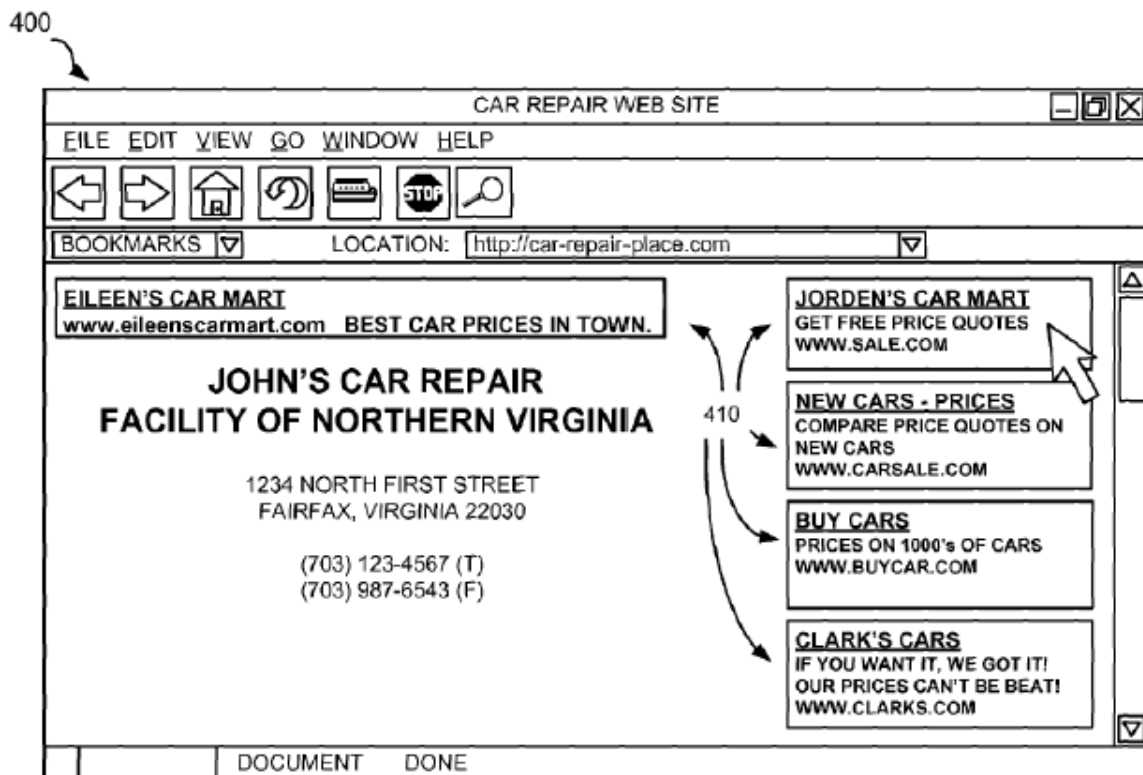


FIG. 4

(EX-1005 Fig. 4.) While one could characterize some of the text associated with these links as invitations—e.g., to "Get free price quotes" or "Compare price quotes"—these phrases are unrelated to a text messaging subscription service and interaction with the link will merely transfer the user to the linked webpage, where

the user may continue to interact with those webpages to obtain a quote. Merely clicking on the link, without providing additional information (e.g., the make, model, and year of the car), will not result in the user being provided with a quote.

88. Agrawal contains no disclosure that is relevant specifically to a text messaging application or subscription service, nor does Petitioner assert that Agrawal does. Therefore, Agrawal provides no motivation or teaching (nor does Petitioner assert that it does) that its advertising links should be modified to display an invitation for or deliver an installment of a text messaging subscription service.

89. Oliver also does not disclose or render obvious a text messaging subscription service, because Oliver discloses only a one-time responsive message. (*See, e.g.*, EX-1011 [0008] (returning a single response to the user containing the promotional reward or other information to the user), [0030] (describing the method “for providing a promotional reward to a user [] via a response message, in accordance with the disclosed principles”).) Indeed, Oliver teaches the use of a token to “ensure that a given reward is only accessed once for every scan.” (EX-1011 [0045].) That is, to receive a second responsive message through Oliver’s method, a user would be required to repeat the entire process—activating (e.g., scanning) a passive entity and sending a message again in order to receive the trackable reward link. (*See id.*) This facilitates Oliver’s explicit goal of enabling businesses to track interactions with their passive entities, as that can only be done

if the user that engages with the passive entity then also engages with the trackable reward link that is generated in response to the activation. (See EX-1011 [0003]-[0006], [0045].)

90. Oliver even discloses a “use token” to limit users to a single scan and—therefore—a single responsive message containing the reward, rather than allowing the user to activate the passive entity and obtain a reward multiple times. (EX-1011 [0043].)

91. Oliver does not disclose any kind of subscription service or list and does not teach sending anything more than a single one-time reward for each activation of a passive entity. Accordingly, a POSITA would not be motivated based on Oliver’s teachings to modify either Agrawal’s advertising link or Oliver’s passive entity to invite a user to subscribe to a text messaging subscription service when Oliver teaches providing the exact opposite—a limited, one-time response. (*E.g.*, EX-1011 [0045], [0008].) For the same reasons, a POSITA would not be motivated to modify Oliver’s limited, one-time responsive message to do the exact opposite and provide an installment of an ongoing text messaging subscription service.

92. Accordingly, neither reference, alone, or together, discloses or renders obvious a text messaging subscription service or provides motivation for displaying an invitation for a text messaging subscription service.

93. Regarding limitation [15b]/[24a], Petitioner’s assertion that a POSITA would be motivated by the fact that Oliver discloses a variety of “promotional information” (Petition 37-38 (limitation [15b])) does not explain why a POSITA would be motivated to modify Agrawal’s advertising link to display an invitation to subscribe to a text message subscription service, specifically. As neither Agrawal nor Oliver discloses a text message subscription service, as I have explained above, a POSITA would not be motivated to display such an invitation, because it would misrepresent what is being offered by the business and simply confuse the user.

94. Regarding limitation [15f]/[24f], Petitioner’s assertion that Oliver’s one-time response message corresponds to “an installment of the text messaging subscription service” is unsupported. (Petition 52-53.) Petitioner does not explain this conclusion when, as I have explained, Oliver does not disclose a text messaging subscription service and, therefore, cannot disclose an installment of a text messaging subscription service.

95. Accordingly, the prior art does not disclose or render obvious these limitations.

C. No Combination of Oliver, Agrawal, and Molinet Renders Obvious Sending, From A Server To A Mobile Device, A Means For Causing The Device To Transition To A Messaging Application

96. No combination of Oliver, Agrawal, and Molinet renders obvious sending, from a server to a mobile device, a means (e.g., a uniform resource identifier

or URI) for causing the mobile device to automatically transition from a web browser application to a text messaging application and generate a pre-populated text message.

97. The challenged independent claims recite the following limitations related to transitioning the mobile device to a messaging application:

Claim Limitation	Claim Language
[15c]	<i>send, from the at least one server and to the mobile device, means for causing [] the mobile device to transition from the first application to a second application different from the first application...the second application being a messaging application</i>
[24b-24d]	<i>defining, [] at least one server, a uniform resource identifier (URI) that deeplinks to a text messaging application that is different from the web browser application; sending the URI from the at least one server to the mobile device, the URI configured to, in response to a first user interaction with the promotional message via the web browser application, cause the mobile device to [] automatically render a user interface of the text messaging application</i>

98. These limitations can be broken into two parts: (1) sending—from a server to a mobile device—a means (e.g., a URI) for causing the mobile device to

transition from the first application to a messaging application; and (2) a means for causing that is triggered when the mobile device detects interaction with the invitation to subscribe to a text messaging subscription service. (EX-1001 cls. 15, 24.)

99. Because none of the cited references disclose or render obvious the entirety of these limitations, Petitioner relies on a combination of all three references. However, a POSITA would not have been motivated to combine and modify the prior art's teachings to achieve the alleged result on which Petitioner relies.

1. ***“send, from the at least one server and to the mobile device, means for causing (1) the mobile device to transition from the first application to a second application different from the first application...the second application being a messaging application....”***

100. Petitioner asserts that Molinet's URL “causes the operating system on the client device 120 to initiate the application,’ which in the case of the combination, is the messaging application.” (Petition 43-44.) While the petition discusses Molinet's disclosure in isolation for this portion of the claims, it is critical to recognize that in order to disclose the challenged claim as a whole (i.e., all of claim 15 or claim 24), Petitioner's argument rests on a combination of all three references: (1) Agrawal for disclosure of a web-based advertising link (which Petitioner alleges to be the claimed promotional material or invitation) and detecting interaction with that link; (2) Oliver for disclosure of pre-populating a text message;

and (3) Molinet for disclosure of a URL that transitions the mobile to an application. (See Petition 42-49.) As to any alleged motivation to modify the prior art or combine their teachings to practice limitation [15b] (or limitations 24[b-d]), specifically, Petitioner merely refers to its general, high-level discussion that “it would have been obvious to implement the business method of Oliver using mobile ads, by using the web-based deeplinking technology of Molinet.” (Petition 43.) I disagree—not only for the reasons discussed above in Section VI(A)—but for at least three critical reasons pertinent to these limitations, specifically.

101. **First**, Petitioner’s assumption that Molinet’s contextual deep link could be used to transition to a messaging application as taught by Oliver is unsupported, as Molinet, unlike the ’897 patent, discloses nothing about a messaging application. (See *generally* EX-1009.) One of Molinet’s stated goals for its method was to address the particular problem of users potentially not having the vendor’s application installed on his or her client device. (EX-1009 [0005].) In such an event, the user is redirected to “an application store where the user may download and install the application.” (EX-1009 [0018].) One of the many advantages of the ’897 patent’s novel technology was that by transitioning from a first application (e.g., a browser) to a messaging application, there was no need for the user to have first installed a vendor-specific application that corresponded to the advertising vendor. (EX-1001 20:32-53.) Molinet is conceptually different.

102. **Second**, Petitioner fails to consider Molinet for all of its teachings and how these teachings direct a POSITA to a particular result when Molinet is combined with Agrawal and Oliver. And that particular result does not practice the challenged claims.

103. Petitioner argues that a POSITA would have implemented Oliver's method within Agrawal's system and augmented Agrawal's system based on Molinet. (Petition 28-31.) But as I explained in Section VI(A), when one applies Molinet's express teachings to Agrawal's system, the resulting combination would, upon a user interacting with one of Agrawal's advertising links, transition the user to a webpage in a browser and not another application at all, let alone a messaging application. (See EX-1009 [0018], [0087]-[0088].) This is because, as I previously explained, Molinet seeks to provide contextually appropriate deeplinks for at least three different scenarios. (See Section V(C), *supra*.) For one of these scenarios in particular, Molinet explicitly teaches that where the contextual information of the client device indicates that the client device does not support an application ecosystem, the server will respond by "caus[ing] the client device to open a landing page on a web browser with more information about the application"—instead of opening another application or an application store. (EX-1009 [0018], [0087]-[0088]; *see also* Section V(C), *supra*.)

104. As I explained in Section VI(A), Agrawal does not disclose a client device with an application ecosystem and does not mention or reference applications at all. (See Section VI(A), *supra*.) Accordingly, when Molinet's explicit teachings are applied within Petitioner's combination of prior art references, the resulting combination would not cause a mobile device to transition from a web browser to another application, and would certainly not transition to a messaging application, specifically.

105. **Third**, Petitioner merely assumes that Oliver's method of transitioning to a messaging application could be carried out within the combination of Agrawal and Molinet, while failing to acknowledge that Oliver and Agrawal are incompatible. As I explained previously in Section VI(A), Agrawal's ability to determine whether web-based advertising activity is legitimate is reliant on the information collected via web-based communication protocols. (Section VI(A), *supra*.) Oliver, on the other hand, utilizes phone-based messaging protocols and does not disclose any requests or interactions with a server that take place based upon the user activating the passive entity and sending a text message to obtain a reward. (*Id.*)

106. Were a POSITA to implement these two references' teachings together, either one of the references will be rendered non-functional OR it would be necessary to substantially redesign one of the references to ensure compatibility. For

example, if one prioritizes Oliver’s teachings—e.g., the activation of a passive entity and the use of the phone-based messaging protocols—then no interaction between a web browser and the server will ever take place and Agrawal’s intended purpose of collecting information from the browser to determine whether activity is legitimate or not is rendered non-functional. (See Section V(B), *supra* (describing Agrawal’s reliance on the collection of information).) But if one alternatively prioritizes Agrawal’s teachings, then modifying Oliver to the extent necessary to support web-based protocols would entirely change the principle of Oliver’s operation and require a substantial redesign of its disclosed method. Faced with only these options, a POSITA would not have been motivated to combine the teachings of two incompatible references.

107. Accordingly, Petitioner’s combination of prior art does not disclose or render obvious this limitation, nor would a POSITA have been motivated to combine their teachings in the first place.

2. “*in response to the mobile device detecting a first interaction with the invitation [to subscribe to a text messaging subscription service]*”

108. With respect to the challenged claims’ requirement that the mobile device be transitioned in response to detecting an interaction with an invitation to subscribe to (or a promotion offering) a text messaging subscription service (EX-1001 cls. 15, 24), Petitioner relies on Agrawal. (Petition 42.) Specifically,

Petitioner asserts that Agrawal teaches displaying advertising links in webpages and renders obvious a mobile device detecting interaction with a link. (Petition 42.)

109. However, as I previously addressed, neither Agrawal—nor the combination of Agrawal, Oliver, and Molinet—disclose or render obvious replacing Agrawal’s links with an invitation to subscribe (or promotion offering) a text messaging subscription service. (See Section VI(B), *supra*.) Accordingly, neither Agrawal, nor its combination with Oliver and Molinet, discloses or renders obvious a mobile device detecting interaction with “***the invitation***” or “***promotional message***” recited in this limitation.

110. Additionally, as I also previously addressed, Molinet explicitly teaches transitioning a client device to a webpage—not an application—in response to a user’s interaction with a link from a client device that does not support an application ecosystem. (Section VI(C)(1), *supra*.) Accordingly, the combination asserted by Petitioner would transition to a webpage—not an application—in response to a user’s interaction with one of Agrawal’s advertising links. (See *id.*) And no POSITA would be motivated to make such a combination when it would make it impossible for Agrawal to implement its method of determining the legitimacy of advertising activity. (*Id.*)

111. Accordingly, the combination of Oliver, Agrawal, and Molinet does not render obvious transitioning to a messaging application “*in response to the mobile device detecting a first interaction with the invitation.*”

VII. CLAIMS AND/OR LIMITATIONS NOT ADDRESSED IN THIS DECLARATION

112. It is my understanding that this declaration is being provided in support of Patent Owner’s Preliminary Response. I have provided analysis of key limitations not included in the prior art. The fact that I have not analyzed particular limitations or claims in no way indicates or supports that these limitations or claims are disclosed or rendered obvious by the prior art, and I reserve the right to supplement my analysis if asked to do so.

VIII. SECONDARY OBJECTIVE INDICIA OF NONOBVIOUSNESS

113. I understand that in determining obviousness of the claimed invention, objective evidence of secondary considerations pertaining to nonobviousness must be considered, including long-felt but unsolved needs, failure of others, commercial success, etc. I understand that such evidence is relevant where “nexus” exists—that is, where the evidence of secondary considerations is the direct result of the unique characteristics of the claimed invention. I further understand that these indicia constitute independent evidence of nonobviousness that can be the most probative evidence in that regard in avoiding the trap of hindsight when reviewing, what otherwise seems like, a combination of known elements.

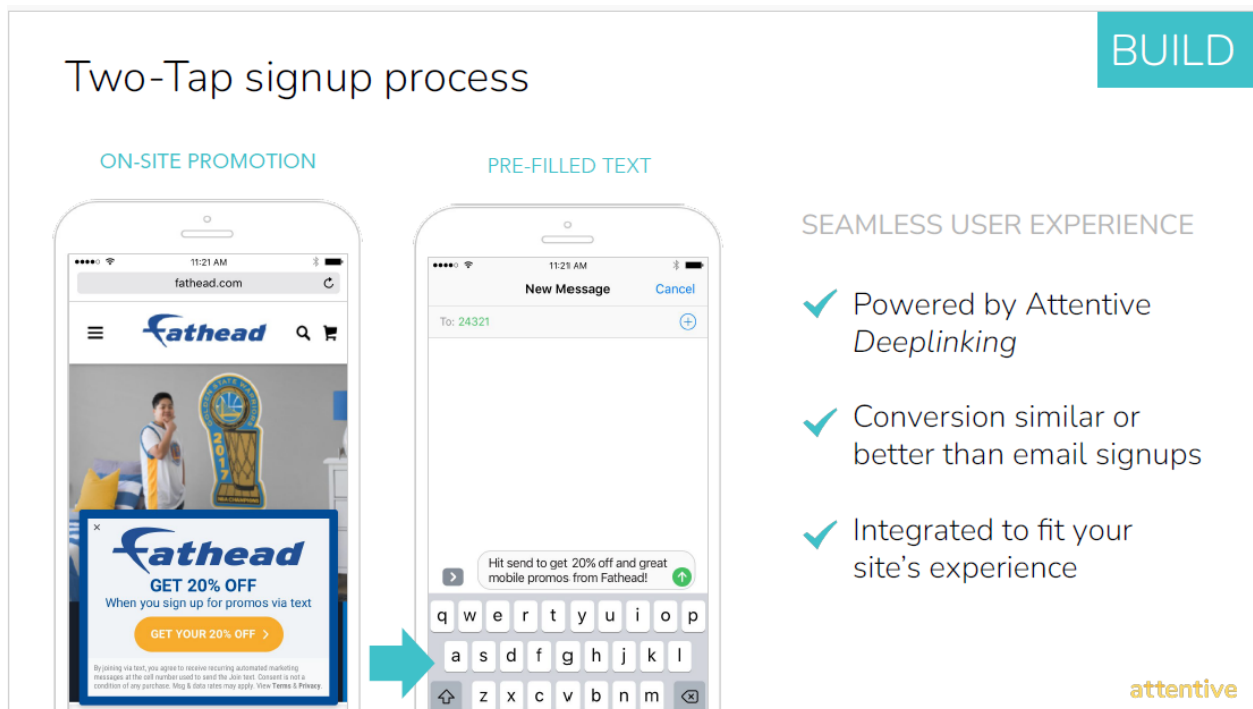
114. As demonstrated by my summary of the prior art, above, there was at least a long-felt and persistent need prior to the '897 patent to improve upon prior art methods for transitioning a user from one interface to another interface on a mobile device to complete, for example, a subscription, communication, and/or purchase, while still maintaining and improving a user's experience and engagement. Prior attempts to develop such methods involved additional burden to the user in the form of "taps" or input, as well as additional time during which the user may lose interest. (*See* Section III, *supra*.)

115. Where others failed, the '897 Patent succeeded. (*See* Section IV(A), *supra*.)

116. I have reviewed the evidence cited and summarized in Patent Owner's preliminary response, which demonstrates that (1) Attentive's "two-tap" sign-up technology satisfied a long-felt need recognized in the prior art, (2) Attentive's "two-tap" sign-up technology has received significant praise in the industry, and (3) Attentive's "two-tap" sign-up technology has led to immense commercial success both for Attentive and its customers (i.e., clients who use the "two-tap" technology in conjunction with their offerings). (*See* Patent Owner's Preliminary Response, Section VII.)

117. The below image from Patent Owner's own marketing deck illustrates a user interacting with Patent Owner's "two-tap" technology platform. When a user

interacts with the call-to-action button of the promotional message (e.g., “Get 20% Off”), the mobile device automatically transitions to a messaging application and automatically populates a custom message in the messaging application that includes an address and a message body. The message body further includes an identifier associated with the webpage.



(EX-2036 15.) After the user taps the send button of the messaging application, the mobile device sends the custom message, and the user is enrolled as a subscriber. (*Id.* 16-17.)

118. Specifically, the '897 patent sought to reduce “[t]he time-consuming and burdensome process”—e.g., many user clicks or screen taps—that often resulted in lost customers. (EX-1001 1:30-46.) As demonstrated by the evidence cited in Patent Owner’s preliminary response, third parties praised Patent Owner’s “two-tap”

technology and attributed its success to its ability to “let[] brands minimize the path between catching a user’s interest and convincing them to agree to a regular flow of marketing texts.” (EX-2013; Patent Owner’s Preliminary Response Section VII(B)-(C).)

119. The challenged ’897 patented claims explicitly describe the benefit of being able to enroll a mobile device in a text messaging subscription service based on receiving the auto-populated message and without receiving any additional information from the mobile device. (EX-1001, cls. 15, 24.) And as demonstrated by the evidence cited in Patent Owner’s preliminary response, the industry recognized Patent Owner’s “two-tap” technology for its “profitable” “[s]implicity”—i.e., the ability to opt users in to begin receiving promotional messages based on nothing but the user’s tap on, e.g., a pop-up, and its pressing of a button to send a pre-populated message. (EX-2031 2-3; EX-2032 2; EX-2015 1; Patent Owner’s Preliminary Response Section VII(C).)

120. This collection of evidence relevant to secondary considerations further supports my opinion that the ’897 patented invention was nonobvious.

IX. CONCLUSION

121. For at least the foregoing reasons, it is my opinion that Petitioner’s grounds do not render obvious any of the challenged claims of the ’897 Patent.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Executed this 22nd day of February 2024 in Irvine, California.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Sam Malek", is written over a horizontal line.

Sam Malek, Ph.D.