UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner

v.

TELCOM VENTURES LLC,
Patent Owner

Patent No. 10,674,432

DECLARATION OF DR. SANDEEP CHATTERJEE IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 10,674,432

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I, Sandeep Chatterjee, declare as follows:

I. INTRODUCTION

1. I have been retained as an independent expert consultant in this proceeding before the United States Patent and Trademark Office ("PTO") regarding U.S. Patent No. 10,674,432 ("the '432 patent") (EX1001).[1] I have been asked to consider whether prior art references disclose or suggest the features recited in claims 1-17 ("the challenged claims") of the '432 patent. My opinions are set forth below.

II. BACKGROUND AND QUALIFICATIONS

2. My qualifications are stated more fully in my curriculum vitae, which is attached as EX1003. Below is a summary of my education, work experience, and other qualifications.

3. I am the Chief Executive Officer of Experantis LLC ("Experantis"), a technology consulting company. Previously, I was the Co-founder, Executive Vice President and Chief Technology Officer of SourceTrace Systems, Inc., a technology and services company enabling the delivery of secure remote electronic services over landline and wireless telecommunications networks.

[1] In this Declaration, I refer to exhibits that I understand are to be attached to the petition for *Inter Partes* Review of the '432 patent.

4. I received my Bachelor's degree in Electrical Engineering and Computer Science from the University of California, Berkeley in 1995. I received my Master's degree in Computer Science from the Massachusetts Institute of Technology (MIT) in 1997, and my Doctorate in Computer Science from MIT in 2001. I received a certificate of completion for an executive education program on global leadership from Harvard University in 2011.

5. My doctoral dissertation at MIT, entitled "Composable System Resources for Networked Systems," involving networked and distributed computer systems and architectures, was selected as one of the top inventions in the history of MIT's Laboratory for Computer Science. This invention is showcased in a time capsule at the Museum of Science in Boston, Massachusetts. Other recipients of this honor include Bill Gates, the founder of Microsoft, and Tim Berners-Lee, the inventor of the World Wide Web.

6. As part of applications of my doctoral research, I developed hardware and software systems for intelligent environments within homes and offices. Some of these devices included televisions, digital picture frames, refrigerators and children's toys. The distributed computing system of these intelligent environments included distributed data storage and retrieval.

7. In 2011, I was named a Young Global Leader. This honor, bestowed each year by the World Economic Forum, recognizes and acknowledges the top

leaders—all below the age of 40—from around the world for their professional accomplishments, commitment to society, and potential to contribute to shaping the future of the world. In 2016, I was appointed to the World Economic Forum's expert network as an expert in technology and innovation.

8. From 1997, I was the Entrepreneur-in-Residence at FidelityCAPITAL, the venture capital arm of Fidelity Investments. In 1999, I founded and served as President and Chief Technology Officer (CTO) of Satora Networks, which developed tools and technologies for building appliances and services for the Internet using wireless and other technologies to extend it beyond the desktop.

9. In 2001, I joined Bluestone Software's Mobile Middleware Labs as a Senior Engineer developing applications and systems infrastructure for enterprise Java/J2EE, Web services, and enterprise mobile solutions. After the completion of Hewlett-Packard's (HP) acquisition of Bluestone, I became a Senior Member of the Technical Staff at HP's Middleware Division. I was responsible for architecting and developing the company's next-generation Web services platform for enterprise as well as mobile environments, known as the Web Services Mediator.

10. I was part of the Expert Group that developed the JSR-00172 J2ME (Java 2 Platform, Micro Edition) Web Services Specification, the worldwide

industry standard for mobile Web services. I am the co-author, with James Webber, of the book "Developing Enterprise Web Services: An Architect's Guide" (published by Prentice-Hall in 2004). This book has been adopted by over 100 universities and colleges around the world, and has been translated or reprinted in a number of countries around the world.

11. I have significant experience in developing complex computing systems. For example, through a contract between HP and the United States Agency for International Development (USAID), I architected and led the development of one of the first mobile banking solutions. This system enabled customers to use their mobile phones and other wireless handsets to connect with the core banking systems of banks and other financial institutions, and perform transactions without having to travel to bank branches. This system supported many banking transactions, including deposits, withdrawals, loan applications, loan disbursements and loan repayments.

12. Later, after SourceTrace Systems' acquisition of this technology, I led the expansion of this solution into multiple countries and into multiple industries. Banks and other financial services companies utilized this technology to make their tellers more efficient, to provide self-service ATMs within branches, and to provide remote access to banking services. Additionally, through our licensing agreement with Telefonica, one of the largest cellular and telecommunications

companies in the world, this solution was deployed in various other industries, including logistics and asset management and customer relationship management. Bloomberg Television selected and featured this technology and the company I co-founded to commercialize this technology on Bloomberg TV's "Bloomberg Innovators" program.

13. I have been a retained expert witness for various disputes that involved significant technology issues, and I have been qualified as a technology expert by U.S. District and State Courts, including in California, Delaware, Florida and Texas in technology areas that are relevant to this case, including but not limited to: computer software systems, distributed computing systems, and mobile and wireless systems. I have previously testified through declaration or expert report, at deposition, and at trial in numerous intellectual property and commercial litigation matters, including for patent litigation, copyright and trade secret misappropriation litigation, and contract dispute cases. I have submitted more than one hundred and ninety expert declarations and expert reports, testified at deposition more than ninety times, and testified at trial or at hearings at least seventeen times. I have been identified as one of the top 1000 patent professionals in the world, and I am listed in the IAM Patent 1000, which identifies the world's leading patent litigation and prosecution attorneys, as well as damages and technology expert witnesses.

14. Experantis is being compensated for my time on this matter at my standard hourly rate and reimbursed for any expenses that I incur related to my work in this matter. Neither Experantis nor I have any financial interest in the outcome of this matter, and Experantis will be paid for my time regardless of the outcome of this matter.

III. MATERIALS REVIEWED

15. The opinions contained in this Declaration are based on the documents I reviewed, my professional judgment, as well as my education, experience, and knowledge regarding systems and processes in the field of graphics interface technology.

16. In forming my opinions expressed in this Declaration, I reviewed the following materials:

EX1001	U.S. Patent No. 10,674,432 to Karabinis et al. ("the '432 patent")
EX1004	Prosecution History of U.S. Patent App. No. 16/251,834
EX1005	U.S. Patent Application Publication No. 2009/0170483 A1 to Barnett et al. ("Barnett")
EX1006	International Patent Publication No. WO 2006/087503 A1 to Waters et al. ("Waters")
EX1007	U.S. Patent No. 7,434,723 to White et al. ("White")
EX1008	International Patent Publication No. WO 2006/094048 A2 to Morrison ("Morrison")
EX1009	U.S. Patent Application Publication No. 2002/0116345 A1 to Harrison ("Harrison")
EX1010	U.S. Patent Application Publication No. 2003/0061111 A1 to Dutta et al. ("Dutta")
EX1011	U.S. Patent Application Publication No. 2008/0140569 A1 to Handel ("Handel")
EX1012	U.S. Patent Application Publication No. 2009/0070263 A1 to Davis et al. ("Davis")
EX1013	U.S. Patent Application Publication No. 2010/0145850 A1 to Nagai et al. ("Nagai")
EX1018	International Patent Publication No. WO 02/09005 A1 to Smith et al. ("Smith")
EX1019	U.S. Patent Application Publication No. 2007/0058734 A1 to Kao et al. ("Kao")
EX1020	U.S. Patent Application Publication No. 2005/0249177 A1 to Huo et al. ("Huo")
EX1021	IEEE Std 802.11a-1999

I also considered any other documents and materials I refer to in this Declaration.

17. My opinions contained in this declaration are based on the documents I reviewed and my knowledge and professional judgment. My opinions have also been guided by my appreciation of how a person of ordinary skill in the art would have understood the state of the art, the prior art, and the claims and the specification of the ’432 patent at the time of the alleged invention, which I discuss below.

18. I have been asked to consider that the time of the alleged invention of the ’432 patent was around 2008 (including and up to November 4, 2008), which corresponds to the filing date of the earliest application associated with the ’432 patent. (EX1001, Cover.)

19. Based on my experience and expertise, it is my opinion that certain references disclose and/or suggest all the features recited in challenged claims of the ’432 patent, as I discuss in detail below.

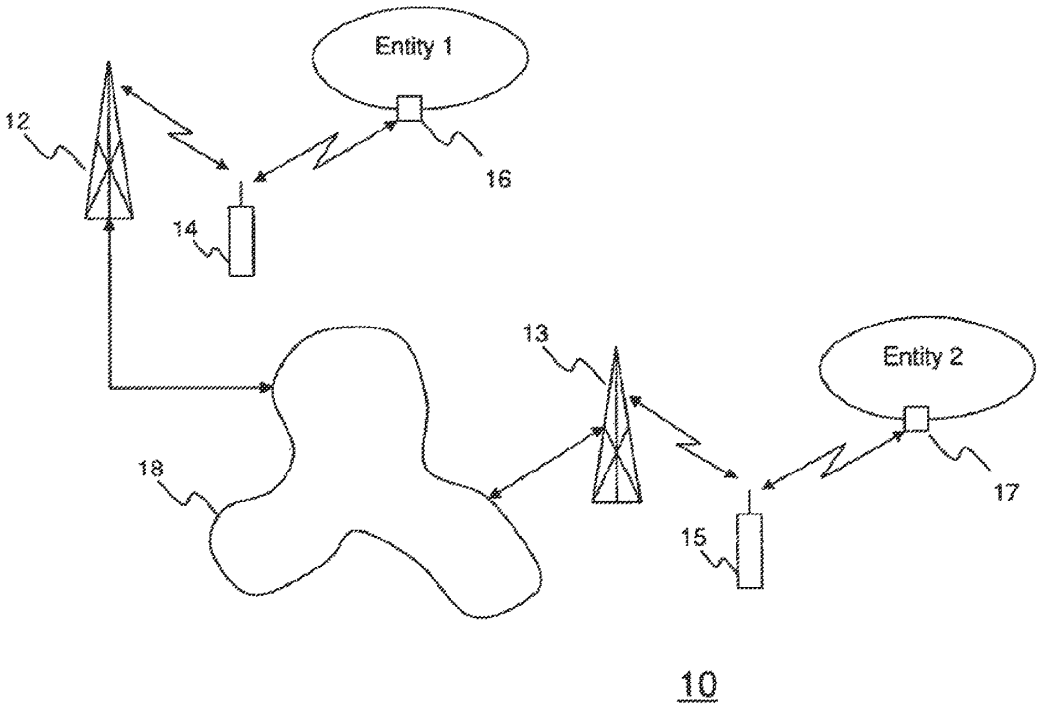
IV. PERSON OF ORDINARY SKILL IN THE ART AND THE TIME OF THE ALLEGED INVENTION

20. I am familiar with the level of ordinary skill in the art regarding the '432 patent as of around November 4, 2008. Considering the '432 patent, the technology, the educational level and experience of workers in the field relating to the patent, and problems and solutions in that field, and drawing on my own experience, I believe a person of ordinary skill in the art at the time of the alleged invention (around November 4, 2008) would have had an undergraduate degree in electrical engineering, computer engineering, computer science or a related field along with two years of work experience in the field of mobile communication applications. More education can supplement practical experience and vice versa.

21. My opinions in this Declaration regarding the '432 patent and the prior art (including the state of the art) are from the perspective of one of ordinary skill in the art as I defined above, during the relevant timeframe (e.g., the time of the alleged invention), which I discussed above as being around November 4, 2008.

V. OVERVIEW OF THE '432 PATENT

22. The '432 patent describes "a detector that is configured to enable a mode of a first device (14) and/or to enable a mode of a second device (15) responsive to a detection that a proximity criterion is satisfied between the first device and an entity (Entity 1) and responsive to at least one of a position, velocity and a Time-of-Day." (EX1001, Abstract.) The '432 patent describes a system containing what it refers to as a first device 14, a second device 15, an entity 1 and entity 2, and a communications system 18, among other components. (EX1001, 8:66-10:35.) The '432 patent explains that the devices 14 and 15 may be mobile devices such as a mobile phone. (*Id.*, 3:9-18.) Entity 1 and entity 2 may be "a person, an animal, a vehicle…, a building…, a product that is for sale, a store that sells one or more products, a check-out counter in a store, a shopping cart that may be used by a customer to carry one or more products selected by the customer for purchase, one or more locations in time and/or space, a geographic area and/or a multi-dimensional region in time and/or space." (*Id.*, 3:47-55.) The communications system 18 may be, for example, a wireless communications system that wirelessly communicates with the first and second devices. (*Id.*, 12:10-14.)



(*Id.*, FIG. 1.)

23. The ’432 patent broadly describes communication features between these devices and entities. For example, “a method in a system 10 is provided comprising: detecting that a proximity criterion is satisfied between a first device 14, such as a mobile subscriber device, and Entity 1; and enabling a mode of the first device and/or a mode of a second device 15 responsive to the detecting.” (*Id.*, 9:1-7.)

24. The claims of the ’432 patent focus on one embodiment in which “[t]he function enabled…[is] a financial transaction.” (*Id.*, 9:18-19; *see also id.*, claims 1-17.) The ’432 patent explains with respect to a mobile phone used in this financial transaction embodiment that “a mobile subscriber device 14 linked to a

communications system 18 via base station 12 can enable a function when the device 14 comes within a proximity of Entity 1." (*Id.*, 9:11-14) "The function enabled can be a financial transaction, the transmission of communications, such as data, and/or some other function that may provision the mobile subscriber device 14 and/or the mobile subscriber device 15 with additional functionality not previously available/activated at the respective devices." (*Id.*, 9:18-24.)

VI. OVERVIEW OF THE PRIOR ART

A. Barnett (EX1005)

25. Barnett discloses a "system and method of communicating shopping information between a consumer and a retailer," including a "system for enabling a consumer to obtain shopping information from a retailer, and the retailer to obtain information from the consumer, using a communication device, such as a mobile phone." (EX1005, ¶[0001].) Barnett explains that "a consumer may utilize…a portable communications device 14, such as a mobile phone" ("smartphone") (*id.*, ¶[0011]), which is "adapted to communicate with a Near Field Communication (NFC) device, a wireless network, such as a Wi-Fi system, and a Bluetooth system, as well as a cellular phone system" (*id.*, ¶[0012]). Barnett describes that the "mobile phone 14 combines the functions of a Wi-Fi device, a contact-less credit card, and a cell phone." (*Id.*, ¶[0012].)

26. Barnett explains that a store may have "stand-alone NFC-enabled devices 34 [which] are used to identify products to NFC-enabled devices." (EX1005, ¶[0023].) As shown in Figure 1 below, a consumer may place their "NFC-enabled mobile phone 14" (in red below) "proximate to the product identifier 34" (in yellow below) so that "information is extracted from the product identifier 34 and transmitted to, and stored within, the NFC-enabled mobile phone 14 in a manner similar to a bar code reader." (*Id.*, ¶[0023].) For example, the

consumer may "retrieve and store information" such as "the identity of the product" (*id.*, ¶[0033]), which may further include "the name of the product and the price of the product, as well as technical information about the product, such as the specifications" (*id.*, ¶[0023]).

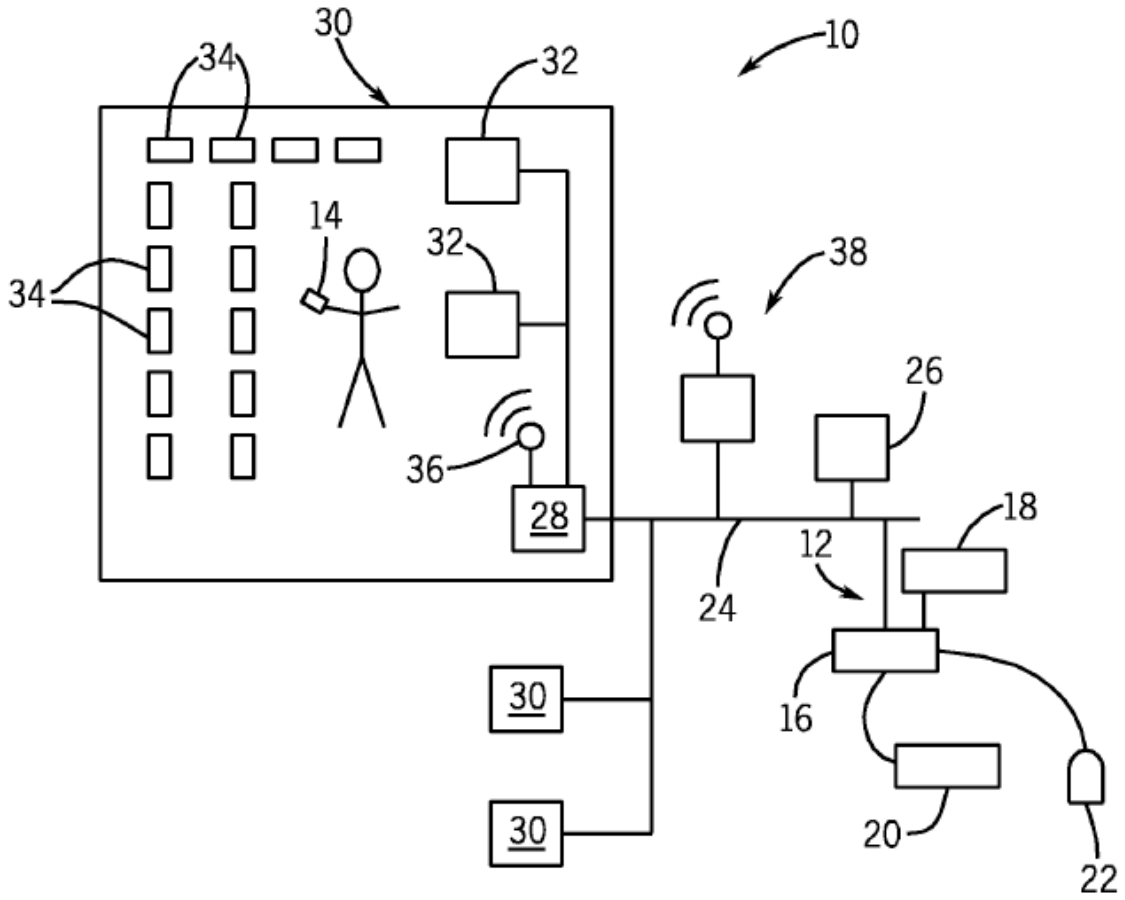


FIG. 1

(*Id.*, FIG. 1.)

27. Barnett also explains that "[w]ithin the store 30 are a series of displays 32 that are connected to the store computing system 28." (EX1005, ¶[0021].) These "displays 32" may be "NFC-enabled displays that can interact with a NFC-enabled mobile phone 14 using device-to-device communication." (*Id.*) "Alternatively, the displays 32 may be Bluetooth-enabled communications devices" such that "when a Bluetooth-enabled mobile phone is located near the display 32, information is transmitted between the Bluetooth-enabled mobile phone 14 and the display 32." (*Id.*, ¶[0022].)

28. Barnett explains that the NFC displays 32 have multiple purposes. First, Barnett discloses that after retrieving product identity information from devices 34, a "consumer may then place the mobile phone 14 proximate to a NFC-display 32 which reads the product identity information from the mobile phone 14 and retrieves additional information regarding the product to the consumer." (EX1005, ¶[0033].) The NFC display 32 may also be used to enable Wi-Fi communication in a consumer's mobile phone so that the consumer can obtain additional information from the retailer. (*Id.*, ¶¶[0016] ("The system 10 is adapted to provide information to a consumer's mobile phone 14 within a store without requiring the consumer to incur a mobile phone usage charge. That is, instead of using the data connection on a cellular carrier, the consumer uses a Wi-Fi network inside the store that has a connection to the Internet."), [0026] ("The store's Wi-Fi

system can be used to retrieve more information about products using the information on the NFC tag located near the product….The consumer may use the mobile phone 14 to access the websites hosted by the central computing system 26 and/or the store computing systems 28, or any other website."), [0035] ("[I]nformation to enable the consumer to use the store's Wi-Fi system 36 may be retrieved from the NFC-enabled display 32. In this embodiment, all of the information needed to automatically configure the mobile phone 14 to use the store[']s Wi-Fi system 36 is provided to the mobile phone 14 via the NFC-enabled display 32.").)

29. Barnett explains that a display 32, as shown in Figure 3 below, may also "us[e] the NFC interface…to complete the transaction using the cell phone as a credit card, debit card, or electronic purse." (*Id.*, ¶[0040]; *see also id.*, ¶[0037] ("The consumer can use the cell phone as a credit card to complete the purchase process by using a NFC-enabled payment register.").) As shown in Figure 3 below, "[t]he NFC-enabled display 32 has an NFC interface 58" "that is adapted to transmit data between the mobile phone 14 and the display 32." (*Id.*, ¶[0038].) For example, Barnett discloses that "the mobile phone 14 may be programmed to provide a specific credit card number when the mobile phone 14 is used in making purchases in a specific store." (*Id.*, ¶[0032].)

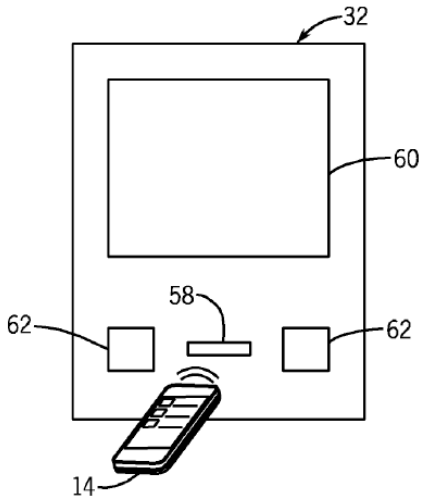


FIG. 3

(*Id.*, FIG. 3.)

30. Barnett discloses that transmission of data between the consumer's phone and the NFC display 32 via NFC interface 58 may occur when devices are within "a short distance, such as a decimeter." (EX1005, ¶[0013].)

B. Waters (EX1006)

31. Waters discloses a system/method of performing a financial transaction using an NFC-enabled mobile device. For example, Waters discloses a "mobile terminal 1" such as a "handheld mobile telephone" (EX1006, 4), which includes a "near field or RFID tag 41" (*id.*, 8). Waters discloses that the near field tag of the mobile terminal may be used to conduct various transactions, such as paying for public transport, making a toll fee payment, or paying for a school lunch. (*Id.*, 1 ("Near field or RFID tags are known. Such tags may be incorporated into smart cards or other devices for use in obtaining entry to buildings or as

electronic tickets for use of public transport or toll fee payment."), 11 ("In the second example, a user wishes to use the near field tag 41 of the mobile terminal 1 to pay for travel by public transport (for example on the London Underground), where entry barriers are equipped with a suitable near field tag reader."), 11 ("A similar arrangement could be used, for example, to enable a school child to pay for their lunch using the near field tag 41.").) Waters discloses that the near field tag is able to "exchange information with a tag reader when the two are brought into close proximity." (*Id.*, 9.)

32. Waters additionally discloses that "the mobile telecommunication device is operable to selectively enable the near field communication device." (EX1006, 4.) Waters explains that "[t]he near field tag 41 may be selectively enabled and disabled in order to reduce the opportunity to obtain information from the near field tag 41 by an unauthorised reader." (*Id.*, 13.) For example, Waters discloses various types of sensors that can be used to activate the near field/RF tag, such as a light sensor, pressure sensor (in combination with a fingerprint or skin resistance sensor), or heat sensor. (*Id.*, 15-16.)

33. With respect to a light sensor, Waters explains that "a photodiode (a sensor that modifies an electric current when exposed to a light source) could be built into the casing of the mobile terminal 1 and act as a switch to activate or deactivate the RF tag 41." (EX1006, 15.) "The RF tag 41 is controlled by the photo

diode so that the RF tag 41 is *only enabled* when the mobile terminal 1 is exposed to light," and is otherwise disabled (e.g., if the mobile terminal is an opaque case or user's pocket). (*Id.*) Waters discloses that the "photodiode may be sensitive to a particular frequency range—for example visible light, infra red or ultra violet," and "[t]he tag reader may be provided with a light emitter that emits light at this frequency, in order to activate the tag." (*Id.*)

34. Waters discloses that a "pressure sensor on the casing of mobile terminal 1" may "act[] as a switch" instead of the light sensor, where the near field/"RF tag 41 is *only enabled* when the user physically presses the pressure sensor," and is otherwise disabled (e.g., when in a case or user's pocket). (EX1006, 15.) Such a "pressure sensor may be combined with [a] fingerprint scanner 45" so that "[t]he combined sensor detects, not only that pressure is applied, but also that an authorized person is pressing the sensor." (*Id.*; *see also id.*, 14 ("[T]he mobile terminal 1 may incorporate a fingerprint reader 45. The fingerprint reader 45 scans the fingerprint of the user when the user's finger is placed on the reader 45 and compares it to the user's fingerprint stored in the memory of the mobile terminal 1 or the SIM 15. If the fingerprints are determined to match, the message is sent from the SIM 15, via link 43, to the RF tag 41.").)

35. "Alternatively, the pressure sensor could be combined with an electrical resistance meter and used to detect that it is a human hand pressing the

pressure sensor, rather than some other object." (EX1006, 15.) For example, Waters explains that "a skin resistance sensor may be provided on the casing of the mobile terminal 1 in dependence of the presence of the pressure sensor described above." (*Id.*, 16.) "The near field tag 41 will *only be operated* when an appropriate resistance, capacitance or inductance is detected, indicating that the user's hand is touching the sensor." (*Id.*)

36. "Heat sensors" can similarly be "incorporated in an appropriate position on the casing of the mobile terminal 1" and "configured to detect that the mobile terminal is in a user's hand by detecting the heat from the hand, and *only enabling* the near field tag 41 when heat from the hand is so detected." (EX1006, 15-16.)

C. White (EX1007)

37. White discloses a system/method of using a mobile device to perform a financial transaction at a point-of-sale device. White describes a "system and method of completing a pending purchase." (EX1007, Abstract.) "The system and method include one or more communication devices, wherein a first communication device participates in a transaction with a point-of-sale [device]." (*Id.*, 3:21-23.) White discloses that the consumer's device (the first communications device) may be a mobile phone. (*Id.*, 3:35-36 ("The first communications device may be a mobile device such as a wireless handset."),

4:15-17 ("In the preferred embodiment, the first communication device 120 is a mobile communication device, such as a mobile telephone or mobile device.").) The "point-of-sale (POS) device…records sales and mediates payments for products or services." (*Id.*, 3:46-56.) For example, "[i]n credit card transactions, the POS device 102 may communicate with a credit card payment system to obtain payment or payment authorization." (*Id.*, 3:56-58.) "The POS device 102 may mediate payment from an electronic purse, a debit card, or other payment methods." (*Id.*, 3:58-60.) White explains that "[t]he POS device 102 communicates with the first communication device 120 to provide purchase information and to receive…payment information, such as credit card numbers." (*Id.*, 3:60-65.) The user's mobile device (the first communication device) "may include one or more adapters for communicating with the POS device 102," such as a "contactless chip operable to provide a communication link with a compatible device using contactless communication." (*Id.*, 5:6-10.)

38. White additionally discloses that its system/method may be used for "mobile payment approval." (EX1007, 1:23-25.) White discloses that the "system 100 for subscriber payment approval" is shown in Figure 1 below and "includes a point-of-sale (POS) device 102" (in green below), "a network 110, a first communication device 120" (in red below), "a second communication device 130" (in blue below), "and a proxy subscriber approval server 140." (*Id.*, 3:46-50.) Like

the first communication device (in red below), the second communication device (in blue below) may be a computer-based entity such as a mobile phone. (*Id.*, 4:11-15 ("The first communication device 120 and the second communication device 130 may be computer-based entities, such as personal digital assistants (PDAs), mobile phones, personal computers (PC), laptop computers, or traditional wireless or wire-line telephones.").) Communication between the first and second communication devices occurs "through the network 110" (*id.*, 4:17-19), which may include "the Internet, a telecommunication wired/wireless network, and/or other computer-based networked systems" (*id.*, 4:5-7).

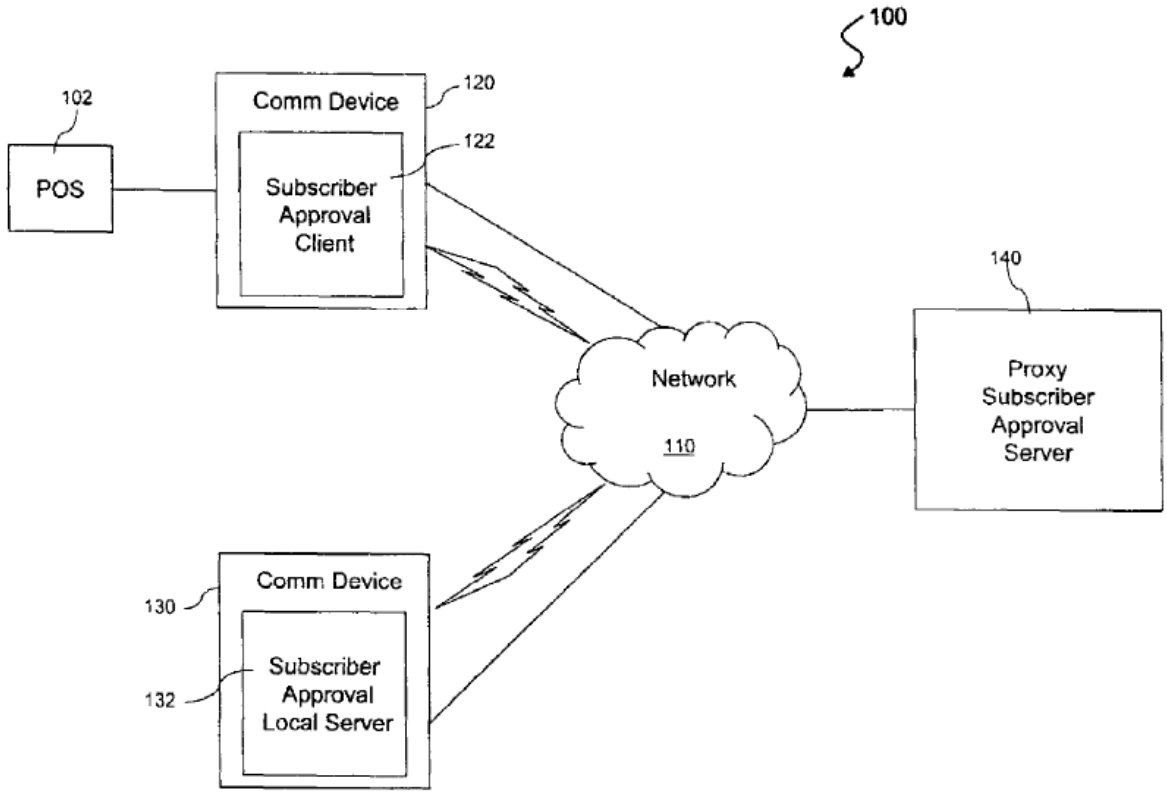


Figure 1

(*Id.*, FIG. 1.)

39. White discloses that when initiating a transaction, a consumer's first communication device 120 is first "presented to the POS device 102." (EX1007, 4:43-44.) "The POS device 102 communicates purchasing information to the first communication device 120 that may include purchase price, identity of the purchased item, identity of the vendor and/or location of the POS device 102." (*Id.*, 4:44-48.) Upon receiving the purchasing information from the POS terminal/device, the first communication device then initiates a subscriber payment approval process in which the first device transmits a subscriber approval request (containing the purchasing information) to the second communication device, which is responsible for approving the pending purchase. (*Id.*, 1:41-44 ("The method also comprises transmitting a subscriber approval request from the first communication device to a second device, wherein the subscriber approval request includes the purchase information."), 4:48-52 ("The first communication device 120 initiates a subscriber payment approval process that may involve the first communication device 120 communicating with the second communication device 130 to provide purchasing information to the second communication device 130 and the second communication device 130 determining approval and communicating approval to the first communication device 120.").) The second communication device 130 communicates approval of the transaction via a

subscriber approval response sent to the first communication device 120. (*Id.*, 1:45-48 ("The method further comprises providing payment information from the first communication device to the point-of-sale device to complete the pending purchase based on a subscriber approval response."), 4:52-54 ("[T]he second communication device 130 determin[es] approval and communicat[es] approval to the first communication device 120.").)

40. If the second communication device 130 does not acknowledge the communication of the first communication device 120, the first communication device 120 may either interpret the lack of response as a rejection or may direct the approval request to the proxy subscriber approval server 140, a computer-based entity (e.g., a general purpose computer) which can decide whether to approve the transaction based on certain rules. (EX1007, 3:26-31 ("The second communication device and/or the first communication device may also communicate with a proxy server wherein one or more rules may be stored. The rules determine approval of transactions with a point-of-sale on behalf of the first communication device."), 4:59-5:5 ("In the event that the second communication device 130 does not acknowledge the communication of the first communication device 120, such as when the second communication device 130 is unavailable, the first communication device 120 may direct an approval request to the proxy subscriber approval server 140. The proxy subscriber approval server 140 performs the

approval that otherwise the second communication device 130 would provide. This behavior may be considered a fall-back or optional response by the first communication device 120. In another embodiment, the first communication device 120 interprets the lack of response as equivalent to a response rejecting the request for approval and no approval request is directed to the proxy subscriber approval server 140."), 7:4-7 ("The proxy subscriber approval server 140 includes one or more computer-based entities, such as a general-purpose computer system.").)

41. White explains that while communicating with the proxy subscriber approval server may be a fall-back procedure, it may also be used to apply approval rules without communicating with a second communication device (e.g., a parent). (*Id.*, 5:30-44 ("[T]he first communication device 120 includes a subscriber approval client 122…[which] may also operate to communicate with…the proxy subscriber approval server 140 through the network 110."), 6:27-39 ("Alternatively, the proxy subscriber approval server 140 may apply the rules to approve payment via the subscriber approval client 122….[C]ertain rules may allow for immediate approval while other rules require an attempt to communicate with the second communication device 130 before exercising the rule to determine approval as a fall-back procedure."), FIG. 2B (depicting at blocks 212 and 214 that

the proxy subscriber approval server may be initially chosen as the approval entity), 7:53-8:3 (describing FIG. 2B); *see also id.*, 5:30-44.)

42. If, however, the transaction is approved (e.g., by the second communication device or the proxy subscriber approval server), the consumer's "first communication device 120 then provides credit card information, debit card information, or electronic purse information to the POS device 102 to complete the payment transaction." (EX1007, 4:55-58.) The POS device then sends that payment information to an authorization entity, such as a financial institution, which returns a response upon authorization, thereby completing the payment approval process. (*Id.*, 3:31-39 ("Following approval, authorization is requested from the credit card company by the point-of-sale system, typically through normal means."), 3:56-58 ("In credit card transactions, the POS device 102 may communicate with a credit card payment system to obtain payment or payment authorization."), 7:40-44 ("The POS device 102 receives payment information from the subscriber approval client 122, submits this payment information to an authorization entity, such as a financial institution, and receives a response back from the authorization entity. The process then exits.").)

43. White discloses that the above steps performed by the first communication device 120 may be performed by the first device's "subscriber approval client 122…enabled as a software program, an application, or a function"

which "operate[s] to collect pending purchase information from the POS device 102," "includes information for completing the pending purchase," and "may also operate to communicate with the second communication device 130 and/or the proxy subscriber approval server 140 through the network 110." (EX1007, 5:30-44.) Similarly, White discloses that the above steps performed by the second communication device 130 may be performed by the second device's "subscriber approval local server" which "include[s] one or more payment information associated with a credit card number, a debit card number, and/or other monetary account information," as well as "rules established within the subscriber local approval server" which may be "appl[ied]…to approve payment via the subscriber approval client 122." (*Id.*, 6:9-39.)

44. White discloses that the above payment approval process is applicable to a variety of different scenarios, such that the second communication device to approve the transaction is selected based on the context. For example, an owner of a credit card may be required to remotely authorize (e.g., from a second, remotely located device) transactions performed by an authorized user of the credit card (e.g., using a first device). (EX1007, 3:7-21 ("[T]he owner of a credit card can block or limit available credit to an authorized user of a credit card….[T]he embodiments discussed below contemplate a system and method for completing a pending purchase at a point-of-sale involving a purchase-by-purchase approval by

the owner or controller of the credit card or other financial account, for example by a remote device or individual controlling the remote device.").) In other remote authorization scenarios, "the operation of the system 100 for subscriber payment approval may be employed for parental control of child spending at the POS device 102," where the parent's "second communication device 130 may be alerted through voice, video, and/or text messaging" and the "parent may have the option of approving or rejecting the pending purchase." (*Id.*, 6:9-64.) Alternatively, "a user of the second communication device 130 may include an employer (i.e., a boss or manager of a business) while, the first communication device 120 may be operated by an employee," where "[t]he employer may in real-time control the pending purchase(s) made on behalf of the employee." (*Id.*, 6:65-7:3.)

D. Smith (EX1018)

45. Smith discloses a system/method of using a mobile device to perform a financial transaction at a point-of-sale device. Smith relates to "[e]lectronic transactions involving the transfer of money," including those involving "[g]oods and services…purchased…using credit or debit accounts with electronic authorization." (EX1018, 1:17-20.) Smith describes electronic transactions occurring between a "purchaser device" (e.g., a "wireless purchasing device (WPD)") and a "vendor device at a point-of-sale." (*Id.*, 4:5-21.) The wireless purchaser device "may take the form of a personal digital assistant (PDA), a

wireless phone or some other wireless communication device." (*Id.*, 4:19-21.) Smith explains that the wireless purchaser device and the vendor point-of-sale device may operate in a wireless system, where communication between the two devices may occur through various short-range wireless networking technologies. (*Id.*, 4:22-26 ("Alternate scenarios include purchasing an item using a **wireless point-of-sale system**. With this transaction, receipt is transferred from the vendor to the wireless point-of-sale device over a **wireless system** such as Bluetooth® or IrDA connection. Under this scenario no direct Internet connection is required as the **information is transferred directly over a wireless connection over the WPD and the vendor**."), 6:12-20 ("**WPD 2 may communicate with other electronic devices using a short range communications device 14 and may be used to communicate with a vendor's point-of-sale device, such as wireless vending device (WVD) 20**, with other WPDs, with external communication devices or with other electronic devices. However, the key function of **short range communications device 14** is to communicate with WVDs and to receive electronic receipt information therefrom. **Short range communications device 14 may be a Bluetooth® transceiver or similar short range networking device** or may be an Infrared transceiver such as an IrDA standard port as well as other devices."), 6:30-7:6 ("Embodiments of the present invention also comprise a wireless vendor device (WVD) 20 which is typically positioned at a point-of-sale

for communication with WPDs. **WVD 20 will generally comprise a short range communications device 14 used in WPDs.** As with communications device 14, device 24 may be a Bluetooth® transceiver, an IrDA port or another communications device….**Short range communications device 24 is connected to a vendor device 22 which is typically an electronic computing device such as an electronic cash register**, an electronic vending machine, a bar-code reader or other device which may transmit and receive product and transaction information and transmit electronic receipt information.").)

46. Smith additionally discloses that its system/method allows for the vendor point-of-sale device to transmit electronic receipts to the purchaser device after a transaction is authorized and completed. Smith explains that "[t]ransactions involving a credit or debit account require authorization from the organization who issues the card," where "authorization is generally obtained at the point-of-sale by a vendor through electronic communications channels." (EX1018, 1:26-28.) Smith discloses that purchase/account information is transmitted to a card issuer or authorization provider, and the vendor may in return receive an authorization code if the transaction is successful (i.e., if the account has sufficient credit/funds to cover the transaction). (*Id.*, 1:28-34 ("A transaction amount is determined and the amount of the transaction along with the account identification information are transmitted to the organization which issued the card or an authorization provider

(AP). **If the account has sufficient credit or funds to cover the transaction amount** and the account has not been deactivated for some other reason, **the card issuer will send an authorization code to the vendor or AP** which indicates that the issuer will transfer the authorized amount to the vendor at an appropriate time."), 2:2-5 ("These **point-of-sale authorization request devices are typically connected to the card issuers or their representatives, sometimes known as authorization processors (APs)**, through a conventional telephone line. Often a dedicated phone line is connected to the point-of-sale authorization device for quick access to authorization data."), 9:4-30 ("**An authorization processor 30 takes requests from devices such as wireless purchasing device 2 and either forwards an authorization in response to the request or forwards a denia**l….Once the funds have been transferred, **a transfer verification would be forwarded back to the authorization processor back to wireless purchasing device 2 and forwarded to wireless vending device 61**.").)

47. Following authorization by the card issuer or authorization processor, Smith discloses that "an electronic receipt will be generated by a vendor device at a point-of-sale." (*Id.*, 4:5-6.) "When a transaction takes place, an electronic receipt may be transmitted from the vendor device to a purchaser device where the receipt may be stored for further processing within the device or for further transmission to other devices and systems." (*Id.*, 4:6-8; *see also id.*, 4:15-17 ("The electronic

receipt will generally be transmitted to a purchaser device and, in preferred embodiments, to a wireless purchasing device (WPD) which can store and manipulate the electronic receipt.").) Smith explains that the receipt is transmitted from the point-of-sale device to the purchaser device using the short-range wireless connection. (*Id.*, 4:23-24 ("**[R]eceipt is transferred from the vendor to the wireless point-of-sale device over a wireless system** such as Bluetooth® or IrDA connection."), 6:16-17 ("**[T]he key function of short range communications device 14** is to communicate with WVDs and **to receive electronic receipt information therefrom**."), 7:6-8 ("**WVD 20 may communicate electronic receipt information** or other information **via short range transceiver 24….**").)

48. Smith discloses that the receipt generated at the point-of-sale device may include "authorization information," as well as other "purchase transaction information including, but not limited to, total purchase price, vendor ID, purchaser ID, item descriptions, itemized pricing, purchase date, purchase time, discount information, creditor information, …, receipt management information and other transaction information." (*Id.*, 7:34-8:3; *see also id.*, 3:33-4:2.) Smith also discloses that the purchaser device may "transfer…receipt information…to [a] secondary computing device 30 for further processing, storage, archiving and other functions." (*Id.*, 8:12-14.) The secondary computing device 30 may be a "web server 42" that can "compile[] receipt information including itemized and

categorized purchase and budget information" and later "transmit compiled information 48 back to purchaser device 2 for display and reference." (*Id.*, 8:15-23; *see also id.*, 7:10-23.)

VII. CLAIM CONSTRUCTION

49. I understand that when considering the meaning of patent claims, one must consider the language of the claims, the specification, and the prosecution history of the patent. I also understand that claim terms are typically given their ordinary and customary meanings as would have been understood by a person of ordinary skill in the art at the time of the invention for the patent. For the '432 patent, as I explained above in Section IV, the relevant time that I have been asked to consider is around November 4, 2008. For purposes of my opinions in this declaration, I have been asked to consider the challenged claims under their plain and ordinary meanings as understood by a person of ordinary skill in the art at the time of the alleged invention, and I have applied such understandings in my analysis of the '432 patent and the prior art.

VIII. THE PRIOR ART DISCLOSES OR SUGGESTS THE SUBJECT MATTER OF CLAIMS 1-17 OF THE '432 PATENT

50. In my opinion, the prior art I discuss below discloses and/or suggests the limitations of claims 1-17.[2]

A. Barnett in View of Waters and White Disclose and/or Suggest Claims 1-7 and 9-16

1. Claim 1

i) [1.pre] "A method of operating a smartphone in performing a plurality of financial transactions, the method comprising:"

51. I understand that this limitation is a preamble of the claim and I have been asked to assume that the preamble of claim 1 is limiting. Under that assumption, it is my opinion that Barnett discloses the limitations therein.

52. Barnett discloses a "system and method of communicating shopping information between a consumer and a retailer," including a "system for enabling a consumer to obtain shopping information from a retailer, and the retailer to obtain information from the consumer, using a communication device, such as a mobile

[2] In this section (Section VIII), I refer to exhibits other than those identified prior art reference(s) that disclose and/or suggest the claimed limitations. Such exhibits reflect the state of the art known to a person of ordinary skill in the art at the time of the alleged invention.

phone." (EX1005, ¶[0001].) Barnett explains that "a consumer may utilize…a portable communications device 14, such as a mobile phone" ("smartphone") (*id.*, ¶[0011]), which is "adapted to communicate with a Near Field Communication (NFC) device, a wireless network, such as a Wi-Fi system, and a Bluetooth system, as well as a cellular phone system" (*id.*, ¶[0012]). Barnett explains that the mobile phone 14 not only operates as a cellular phone using a cellular network (*id.*, ¶¶[0005], [0012], [0027]), but also "combines the functions of a Wi-Fi device, a contact-less credit card, and a cell phone" (*id.*, ¶[0012]), and thus a person of ordinary skill in the art would have understood that a consumer's mobile phone operates as a "smartphone" because it has advanced features beyond the standard calling and texting features of a cellular phone.

53. Barnett explains that a store may have "stand-alone NFC-enabled devices 34 [which] are used to identify products to NFC-enabled devices." (EX1005, ¶[0023].) As shown in Figure 1 below, a consumer may place their "NFC-enabled mobile phone 14" (in red below) "proximate to the product identifier 34" (in yellow below) so that "information is extracted from the product identifier 34 and transmitted to, and stored within, the NFC-enabled mobile phone 14 in a manner similar to a bar code reader." (*Id.*, ¶[0023].) For example, the consumer may "retrieve and store information" such as "the identity of the product" (*id.*, ¶[0033]), which may further include "the name of the product and

the price of the product, as well as technical information about the product, such as the specifications" (*id.*, ¶[0023]).

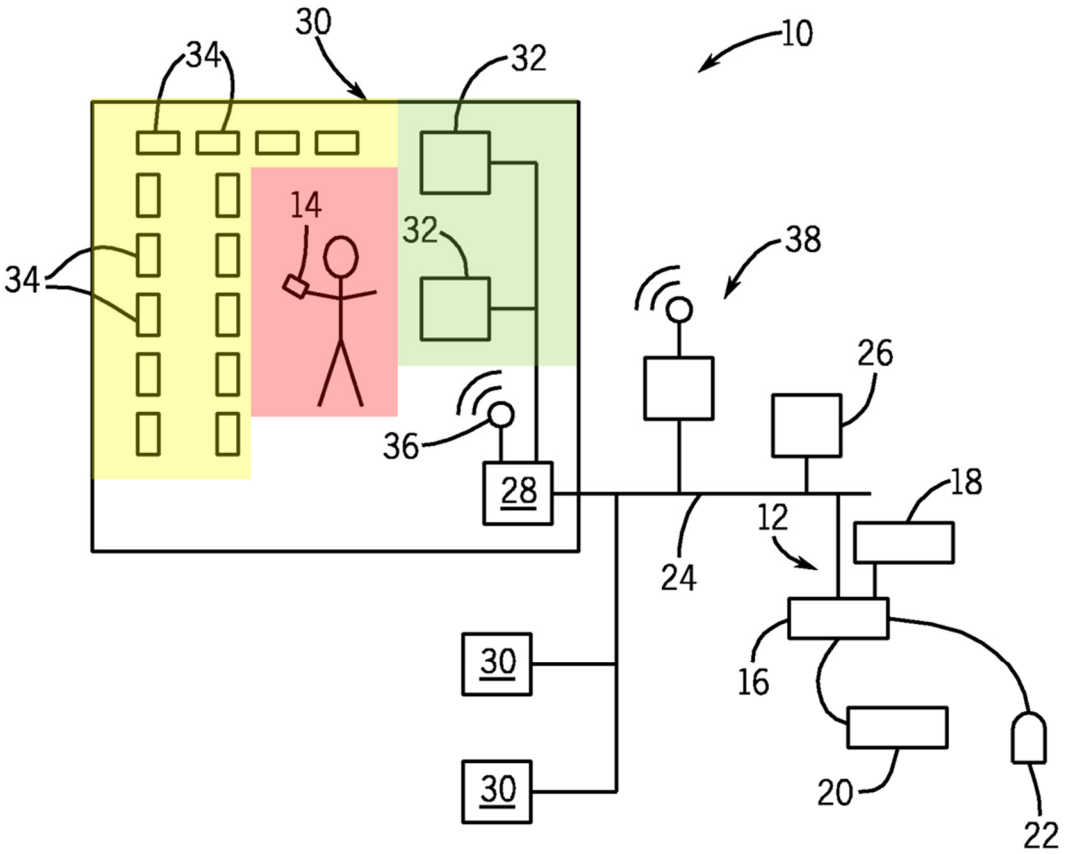


FIG. 1

(*Id.*, FIG. 1 (annotated).)

54. Barnett also explains that "[w]ithin the store 30 are a series of displays 32 that are connected to the store computing system 28." (EX1005, ¶[0021].) These "displays 32" (in green above) may be "NFC-enabled displays that can interact with a NFC-enabled mobile phone 14 using device-to-device

communication." (*Id.*) "Alternatively, the displays 32 may be Bluetooth-enabled communications devices" such that "when a Bluetooth-enabled mobile phone is located near the display 32, information is transmitted between the Bluetooth-enabled mobile phone 14 and the display 32." (*Id.*, ¶[0022].)

55. Barnett explains that the NFC displays 32 have multiple purposes. First, Barnett discloses that after retrieving product identity information from devices 34, a "consumer may then place the mobile phone 14 proximate to a NFC-display 32 which reads the product identity information from the mobile phone 14 and retrieves additional information regarding the product to the consumer." (EX1005, ¶[0033].) The NFC display 32 may also be used to enable Wi-Fi communication in a consumer's mobile phone so that the consumer can obtain additional information from the retailer via the Internet. (*Id.*, ¶¶[0015] ("The mobile phone 14 also is **adapted to access a Wi-Fi system** (IEEE 802.11)….Some **applications for Wi-Fi include Internet**…."), [0016] ("The system 10 is adapted to provide information to a consumer's mobile phone 14 within a store without requiring the consumer to incur a mobile phone usage charge. That is, instead of using the data connection on a cellular carrier, the **consumer uses a Wi-Fi network inside the store that has a connection to the Internet**."), [0026] ("**The store's Wi-Fi system can be used to retrieve more information about products** using the information on the NFC tag located near the product….The consumer

may use the mobile phone 14 to access the websites hosted by the central computing system 26 and/or the store computing systems 28, or any other website."), [0035] ("**[I]nformation to enable the consumer to use the store's Wi-Fi system 36 may be retrieved from the NFC-enabled display 32.** In this embodiment, all of the information needed to automatically configure the mobile phone 14 to use the store[']s Wi-Fi system 36 is provided to the mobile phone 14 via the NFC-enabled display 32."), [0041] ("[T]he mobile phone 14 has…**Wi-Fi capability**….Inside the mobile phone 14 are…a **Wi-Fi interface**….").)

56. Barnett explains that a display 32, as shown in Figure 3 below, may also "us[e] the NFC interface…to complete the transaction using the cell phone as a credit card, debit card, or electronic purse." (*Id.*, ¶[0040]; *see also id.*, ¶[0037] ("The consumer can use the cell phone as a credit card to complete the purchase process by using a NFC-enabled payment register.").) As shown in Figure 3 below, "[t]he NFC-enabled display 32 has an NFC interface 58" (in green) "that is adapted to transmit data between the mobile phone 14 and the display 32." (*Id.*, ¶[0038].) For example, Barnett discloses that "the mobile phone 14 may be programmed to provide a specific credit card number when the mobile phone 14 is used in making purchases in a specific store." (*Id.*, ¶[0032].)

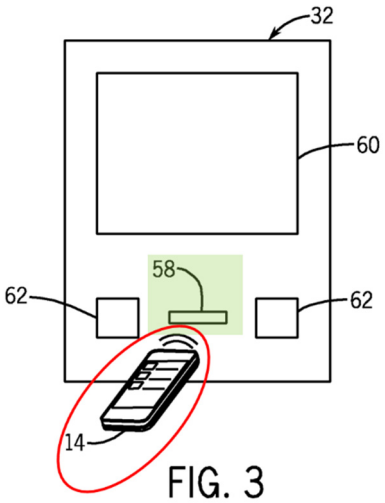


FIG. 3

(*Id.*, FIG. 3 (annotated).)

57. Barnett discloses that transmission of data between the consumer's phone (in red above) and the NFC display 32 via NFC interface 58 (in green above) may occur when devices are within "a short distance, such as a decimeter." (EX1005, ¶[0013].) In my opinion, a person of ordinary skill in the art would have recognized that the NFC-enabled mobile phone must be brought within a short distance of the NFC-enabled display 32's NFC interface in order for the phone to enable transmission of data between the phone and NFC display 32, thus establishing the capability at the phone to complete a purchase/transaction at the NFC display 32. Because the phone is programmed with a plurality of credit card numbers and can automatically use the appropriate one in each store, the phone can be used to perform a plurality of transactions.

58. Barnett discloses operating the phone to perform a plurality of financial transactions because "the mobile phone 14 may be programmed with a plurality of different credit card numbers" and "to provide a specific credit card number when the mobile phone 14 is used in making purchases in a specific store." (EX1005, ¶[0032].) In particular, "the mobile phone 14 may be programmed to provide a first credit card number when the consumer is in a first store and provide a second credit card number when the consumer is in a second store." (*Id.*) Barnett discloses that "once this information is initially programmed into the mobile phone 14, the configuration of the mobile phone 14 as a credit card is done automatically simply by placing the mobile phone 14 proximate to the NFC-enabled display 32 so that the desired information may be exchanged between the two." (*Id.*) In other words, the credit card used for a particular transaction is selected at the time of the transaction so that the "consumer does not have to scroll through menus or follow any other time consuming process simply to configure the mobile phone 14 each time they make a purchase."

59. For all of these reasons, and additionally for the reasons I discuss below with respect to limitations [1.a]-[1.f], Barnett discloses "[a] method of operating a smartphone in performing a plurality of financial transactions."

ii) [1.a] "responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information requesting an authorization;"

60. Barnett in view of Waters and White discloses and/or suggests this limitation. In my opinion, a person of ordinary skill in the art would have been motivated to implement such features in the Barnett system/method in view of Waters and White. In particular, as discussed below in Section VIII.A.1.ii.(1), a person of ordinary skill in the art would have been motivated to modify the Barnett system/method in view of Waters such that the combined system determines that "at least one physiological parameter having been sensed by at least one sensor of the smartphone." And as discussed below in Section VIII.A.1.ii.(2), a person of ordinary skill in the art would have been motivated to further modify the Barnett-Waters system/method in view of White such that the combined system performs the following bolded/italicized features: "***responsive to*** at least one physiological parameter having been sensed by at least one sensor of the smartphone, ***enabling a mode to communicate by the smartphone information requesting an authorization***."

(1) Barnett-Waters Combination

61. **First**, a person of ordinary skill in the art would have been motivated to modify the Barnett system/method in view of Waters such that it determines that

"at least one physiological parameter having been sensed by at least one sensor of the smartphone" in order to enable the NFC capabilities in the user's phone.

62. Like Barnett, Waters discloses a system/method of performing a financial transaction using an NFC-enabled mobile device. For example, Waters discloses a "mobile terminal 1" such as a "handheld mobile telephone" (EX1006, 4), which includes a "near field or RFID tag 41" (*id.*, 8). Waters discloses that the near field tag of the mobile terminal may be used to conduct various transactions, such as paying for public transport, making a toll fee payment, or paying for a school lunch. (*Id.*, 1 ("Near field or RFID tags are known. Such tags may be incorporated into smart cards or other devices for use in obtaining entry to buildings or as **electronic tickets for use of public transport or toll fee payment**."), 11 ("In the second example, a user wishes to use the near field tag 41 of the mobile terminal 1 to **pay for travel by public transport** (for example on the London Underground), where entry barriers are equipped with a suitable near field tag reader."), 11 ("A similar arrangement could be used, for example, to **enable a school child to pay for their lunch** using the near field tag 41.").) Waters discloses that the near field tag is able to "exchange information with a tag reader when the two are brought into close proximity." (*Id.*, 9.) Thus, Waters is similar to Barnett, which discloses a system/method of purchasing products in a store at an NFC-enabled display/register using an NFC-enabled mobile device. (*See* my

analysis and discussion in Section VIII.A.1.i.) In other words, both Barnett and Waters relate to conducting financial transactions using a mobile device based at least in part on proximity of the mobile device to a point-of-sale device. In my opinion, a person of ordinary skill in the art would have therefore been motivated to consider the teachings of Waters when implementing Barnett's system/method.

63. Waters additionally discloses that "the mobile telecommunication device is operable to selectively enable the near field communication device." (EX1006, 4.) Waters explains that "[t]he near field tag 41 may be selectively enabled and disabled in order to reduce the opportunity to obtain information from the near field tag 41 by an unauthorised reader." (*Id.*, 13.) For example, Waters discloses various types of sensors that can be used to activate the near field/RF tag, such as a pressure sensor (in combination with a fingerprint or skin resistance sensor) or heat sensor. (*Id.*, 15-16.) Waters provides this functionality to enhance the device's security features for conducting financial transactions. (EX1006, Title ("Improved Security for Wireless Communication"), Abstract, 2 ("The present invention, in one aspect, seeks to provide additional or improved security."), 4, 13-16.)

64. Waters discloses that a "pressure sensor on the casing of mobile terminal 1" may "act[] as a switch," where the near field/"RF tag 41 is ***only enabled*** when the user physically presses the pressure sensor," and is otherwise

disabled (e.g., when in a case or user's pocket). (EX1006, 15.) Such a "pressure sensor may be combined with [a] fingerprint scanner 45" so that "[t]he combined sensor detects, not only that pressure is applied, but also that an authorized person is pressing the sensor." (*Id.*; *see also id.*, 14 ("[T]he mobile terminal 1 may incorporate a fingerprint reader 45. The **fingerprint reader 45 scans the fingerprint of the user when the user's finger is placed on the reader 45 and compares it to the user's fingerprint stored in the memory of the mobile terminal** 1 or the SIM 15. If the fingerprints are determined to match, the message is sent from the SIM 15, via link 43, to the RF tag 41.").)

65. "Alternatively, the pressure sensor could be combined with an electrical resistance meter and used to detect that it is a human hand pressing the pressure sensor, rather than some other object." (EX1006, 15.) For example, Waters explains that "a skin resistance sensor may be provided on the casing of the mobile terminal 1 in dependence of the presence of the pressure sensor described above." (*Id.*, 16.) "The near field tag 41 will ***only be operated*** when an appropriate resistance, capacitance or inductance is detected, indicating that the user's hand is touching the sensor." (*Id.*)

66. "Heat sensors" can similarly be "incorporated in an appropriate position on the casing of the mobile terminal 1" and "configured to detect that the mobile terminal is in a user's hand by detecting the heat from the hand, and ***only***

enabling the near field tag 41 when heat from the hand is so detected." (EX1006, 15-16.)

67. Accordingly, Waters discloses "at least one physiological parameter having been sensed" (e.g., a fingerprint/pressure combination, a skin resistance/pressure combination, or heat) "by at least one sensor of the smartphone" (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) and only enabling the near field tag while a value of the parameter satisfies some criterion (e.g., a fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat from the user's hand is actively being applied).

68. In my opinion, a person of ordinary skill in the art would have been motivated to incorporate such a sensing mechanism, similar to that disclosed by Waters, to selectively enable/disable the NFC tag in Barnett's device. Waters explains that the selective enablement/disablement of the near field tag is intended to improve the security of the tag to prevent unauthorized access (e.g., by an unauthorized reader). (EX1006, 9 ("**In order to improve the security of the near field tag**, in the present embodiment, it is proposed to use the SIM 15 of mobile terminal 1 to **control to some extent the operation of the near field tag 41**….In this embodiment, the authentication of the SIM 15 is used to **protect data held by**

the memory of the near field tag 41 from unauthorised access."), 13 ("The **near field tag 41 may be selectively enabled and disabled** in order to **reduce the opportunity to obtain information** from the near field tag 41 **by an unauthorised reader**.").) In my opinion, a person of ordinary skill in the art would have understood the benefit of such a security measure in the context of Barnett's system/method, which as discussed above, involves a user interacting with many NFC readers/displays in the same store. Barnett explains that these NFC readers are largely unmonitored by retail workers, since the goal of the invention is to reduce the number of higher cost human employees in the store. (EX1005, ¶[0043].) In my opinion, a person of ordinary skill in the art would have understood that the presence of employees provides a security benefit to a store by deterring theft or other unauthorized access to merchandise and store technology. For example, in a store with more employees, a bad actor may be less likely to install a card skimming device or similar unauthorized NFC reader to gain access to customer credit/debit card information. In my opinion, a person of ordinary skill in the art would have thus recognized the importance of implementing security features at each user's mobile phone in an environment with fewer employees, so as to reduce the risk of unauthorized access by an unauthorized NFC reader.

69. Barnett also emphasizes that security is an important feature of mobile phone communication technologies by explaining, for example, the benefits of

authentication mechanisms for accessing wireless internet (EX1005 ¶¶[0005], [0012]) and "secure" Bluetooth technologies (*id.*, ¶[0017]). In my opinion, a person of ordinary skill in the art would have thus recognized that communication security is important to the mobile phone and would have been motivated to implement security improvements to the mobile phone's NFC technology, e.g., by selectively enabling/disabling the NFC tag to prevent access by an unauthorized reader. In my opinion, a person of ordinary skill in the art would have understood that selectively enabling and disabling the NFC tag of a mobile phone would have numerous user experience benefits as well, such as preventing unintended financial transactions or other unintended use of the NFC tag, and helping preserve mobile phone battery by disabling the NFC tag when it is not needed.

70. In my opinion, a person of ordinary skill in the art would have also had a reasonable expectation of success combining the teachings of Barnett and Waters. As I discussed above, both references are in the same field of art. Moreover, Barnett suggests that its system/method is flexible and modifications to the NFC-enabled mobile phone are contemplated. (EX1005, ¶[0044].) In my opinion, a person of ordinary skill in the art would have had the skill to implement and reasonable expectation of success in achieving such a modification because it would have involved a combination of known technologies (e.g., known system/method for performing financial transactions using an NFC-enabled mobile

phone (Barnett)) according to known methods (e.g., known methods of selectively enabling and disabling NFC tags in mobile phones for use in financial transactions (Waters)) to yield the predictable result of a modified Barnett-Waters system/method that implements a sensing mechanism in each user's phone to selectively enable and disable the phone's NFC tag such that sensing a value of the parameter and determining that it meets some criterion is required in order to activate the NFC tag used to conduct financial transactions in the store.

(2) Barnett-Waters Combination

71. **Second**, a person of ordinary skill in the art would have been motivated to further modify the Barnett-Waters system/method in view of White such that it performs the following bolded/italicized features: "***responsive to*** at least one physiological parameter having been sensed by at least one sensor of the smartphone, ***enabling a mode to communicate by the smartphone information requesting an authorization***."

72. Like Barnett and Waters, White discloses a system/method of using a mobile device to perform a financial transaction at a point-of-sale device. White describes a "system and method of completing a pending purchase." (EX1007, Abstract.) "The system and method include one or more communication devices, wherein a first communication device participates in a transaction with a point-of-sale [device]." (*Id.*, 3:21-23.) White discloses that the consumer's device (the first

communications device) may be a mobile phone. (*Id.*, 3:35-36 ("The **first communications device may be a mobile device** such as a wireless handset."), 4:15-17 ("In the preferred embodiment, the **first communication device 120 is a mobile communication device, such as a mobile telephone** or mobile device.").) The "point-of-sale (POS) device…records sales and mediates payments for products or services." (*Id.*, 3:46-56.) For example, "[i]n credit card transactions, the POS device 102 may communicate with a credit card payment system to obtain payment or payment authorization." (*Id.*, 3:56-58.) "The POS device 102 may mediate payment from an electronic purse, a debit card, or other payment methods." (*Id.*, 3:58-60.) White explains that "[t]he POS device 102 communicates with the first communication device 120 to provide purchase information and to receive…payment information, such as credit card numbers." (*Id.*, 3:60-65.) The user's mobile device (the first communication device) "may include one or more adapters for communicating with the POS device 102," such as a "contactless chip operable to provide a communication link with a compatible device using contactless communication." (*Id.*, 5:6-10.) Thus, White is similar to both Barnett and Waters, which both disclose systems/methods of purchasing products in a store at a point-of-sale terminal using a chip-enabled mobile phone (i.e., NFC, which a person of ordinary skill in the art would have understood is implemented via a chip/tag in the mobile phone). (*See* my analysis and discussion in Sections

VIII.A.1.i, VIII.A.1.ii.(1).) In my opinion, a person of ordinary skill in the art would have therefore been motivated to consider the teachings of White when implementing the Barnett-Waters system/method.

73. White additionally discloses that its system/method may be used for "mobile payment approval." (EX1007, 1:23-25.) White discloses that the "system 100 for subscriber payment approval" is shown in Figure 1 below and "includes a point-of-sale (POS) device 102" (in green below), "a network 110, a first communication device 120" (in red below), "a second communication device 130" (in blue below), "and a proxy subscriber approval server 140." (*Id.*, 3:46-50.) Like the first communication device (in red below), the second communication device (in blue below) may be a computer-based entity such as a mobile phone. (*Id.*, 4:11-15 ("The first communication device 120 and **the second communication device 130 may be computer-based entities, such as** personal digital assistants (PDAs), **mobile phones**, personal computers (PC), laptop computers, or traditional wireless or wire-line telephones.").) Communication between the first and second communication devices occurs "through the network 110" (*id.*, 4:17-19), which may include "the Internet, a telecommunication wired/wireless network, and/or other computer-based networked systems" (*id.*, 4:5-7). For example, White explains that "the first communication device 120 and the second communication device 130 may communicate through voice-based telephony, video conferencing,

internet protocol, multimedia messaging service (MMS), short messaging service (SMS), email, instant text messaging, and/or other means of communication." (*Id.*, 4:20-25.)

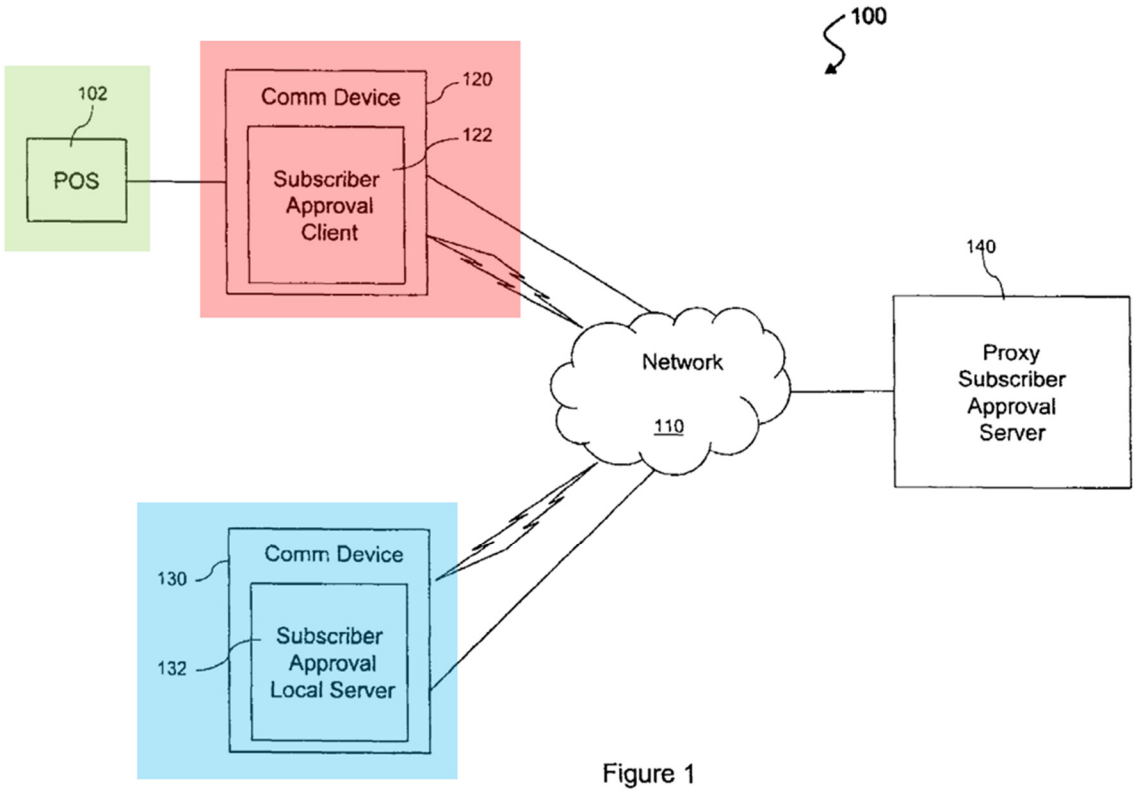


Figure 1

(*Id.*, FIG. 1 (annotated).)

74. White discloses that when initiating a transaction, a consumer's first communication device 120 is first "presented to the POS device 102." (EX1007, 4:43-44.) "The POS device 102 communicates purchasing information to the first communication device 120 that may include purchase price, identity of the

purchased item, identity of the vendor and/or location of the POS device 102." (*Id.*, 4:44-48.) Upon receiving the purchasing information from the POS terminal/device, the first communication device then initiates a subscriber payment approval process in which the first device transmits a subscriber approval request (containing the purchasing information) to the second communication device, which is responsible for approving the pending purchase. (*Id.*, 1:41-44 ("The method also comprises transmitting a **subscriber approval request** from the first communication device to a second device, wherein the subscriber approval request includes the purchase information."), 4:48-52 ("The first communication device 120 initiates a **subscriber payment approval process that may involve the first communication device 120 communicating with the second communication device 130 to provide purchasing information to the second communication device 130 and the second communication device 130 determining approval** and communicating approval to the first communication device 120.").) The second communication device 130 communicates approval of the transaction via a subscriber approval response sent to the first communication device 120. (*Id.*, 1:45-48 ("The method further comprises providing payment information from the first communication device to the point-of-sale device to complete the pending purchase based on a **subscriber approval response**."), 4:52-54 ("**[T]he second**

communication device 130 determin[es] approval and **communicat[es] approval to the first communication device 120**.").)

75. If the second communication device 130 does not acknowledge the communication of the first communication device 120, the first communication device 120 may either interpret the lack of response as a rejection or may direct the approval request to the proxy subscriber approval server 140, a computer-based entity (e.g., a general purpose computer) which can decide whether to approve the transaction based on certain rules. (EX1007, 3:26-31 ("The second communication device and/or the first communication device may also communicate with a **proxy server wherein one or more rules may be stored**. The **rules determine approval of transactions** with a point-of-sale on behalf of the first communication device."), 4:59-5:5 ("In the event that the **second communication device 130 does not acknowledge the communication** of the first communication device 120, such as when the second communication device 130 is unavailable, the **first communication device 120 may direct an approval request to the proxy subscriber approval server 140. The proxy subscriber approval server 140 performs the approval** that otherwise the second communication device 130 would provide. This behavior may be considered a fall-back or optional response by the first communication device 120. In another embodiment, the **first communication device 120 interprets the lack of response as equivalent to a**

response rejecting the request for approval and no approval request is directed to the proxy subscriber approval server 140."), 7:4-7 ("The **proxy subscriber approval server 140** includes one or more **computer-based entities**, such as a **general-purpose computer system**.").)

76. White explains that while communicating with the proxy subscriber approval server may be a fall-back procedure, it may also be used to apply approval rules without communicating with a second communication device (e.g., a parent). (*Id.*, 5:30-44 ("[T]he first communication device 120 includes a **subscriber approval client 122**…[which] may also operate to **communicate with…the proxy subscriber approval server 140** through the network 110."), 6:27-39 ("Alternatively, the **proxy subscriber approval server 140 may apply the rules to approve payment via the subscriber approval client 122**….[C]ertain **rules may allow for immediate approval** while other rules require an attempt to communicate with the second communication device 130 before exercising the rule to determine approval as a fall-back procedure."), FIG. 2B (depicting at blocks 212 and 214 that the proxy subscriber approval server may be initially chosen as the approval entity), 7:53-8:3 (describing FIG. 2B); *see also id.*, 5:30-44.)

77. If, however, the transaction is approved (e.g., by the second communication device or the proxy subscriber approval server), the consumer's

"first communication device 120 then provides credit card information, debit card information, or electronic purse information to the POS device 102 to complete the payment transaction." (EX1007, 4:55-58.) The POS device then sends that payment information to an authorization entity, such as a financial institution, which returns a response upon authorization, thereby completing the payment approval process. (*Id.*, 3:31-39 ("Following approval, **authorization is requested from the credit card company by the point-of-sale system**, typically through normal means."), 3:56-58 ("In credit card transactions, **the POS device 102 may communicate with a credit card payment system to obtain** payment or **payment authorization**."), 7:40-44 ("The **POS device 102** receives payment information from the subscriber approval client 122, **submits this payment information to an authorization entity, such as a financial institution**, and receives a response back from the authorization entity. The process then exits.").)

78. White discloses that the above steps performed by the first communication device 120 may be performed by the first device's "subscriber approval client 122…enabled as a software program, an application, or a function" which "operate[s] to collect pending purchase information from the POS device 102," "includes information for completing the pending purchase," and "may also operate to communicate with the second communication device 130 and/or the proxy subscriber approval server 140 through the network 110." (EX1007, 5:30-

44.) Similarly, White discloses that the above steps performed by the second communication device 130 may be performed by the second device's "subscriber approval local server" which "include[s] one or more payment information associated with a credit card number, a debit card number, and/or other monetary account information," as well as "rules established within the subscriber local approval server" which may be "appl[ied]…to approve payment via the subscriber approval client 122." (*Id.*, 6:9-39.)

79. White discloses that the above payment approval process is applicable to a variety of different scenarios, such that the second communication device to approve the transaction is selected based on the context. For example, an owner of a credit card or debit card may be required to remotely authorize (e.g., from a second, remotely located device) transactions performed by an authorized user of the credit card (e.g., using a first device). (EX1007, 3:7-21 ("**[T]he owner of a credit card can block or limit available credit to an authorized user of a credit card**….[T]he embodiments discussed below contemplate a system and method for completing a pending purchase at a point-of-sale involving a **purchase-by-purchase approval by the owner or controller of the credit card or other financial account, for example by a remote device or individual controlling the remote device.**"), 4:38-42 ("For example, the **first communication device 120 and/or the second communication device 130 may include** information such as a

credit card number, a debit card number, other account information, and rules on which to base decisions."), 4:43-58 ("The first communication device 120 initiates a **subscriber payment approval process** that may involve the **first communication device 120 communicating with the second communication device 130 to provide purchasing information to the second communication device 130 and the second communication device 130 determining approval and communicating approval to the first communication device 120**. The first communication device 120 then provides credit card information, debit card information, or electronic purse information to the POS device 102 to complete the payment transaction.").) In other remote authorization scenarios, "the operation of the system 100 for subscriber payment approval may be employed for parental control of child spending at the POS device 102," where the parent's "second communication device 130 may be alerted through voice, video, and/or text messaging" and the "parent may have the option of approving or rejecting the pending purchase." (*Id.*, 6:9-64.) Alternatively, "a user of the second communication device 130 may include an employer (i.e., a boss or manager of a business) while, the first communication device 120 may be operated by an employee," where "[t]he employer may in real-time control the pending purchase(s) made on behalf of the employee." (*Id.*, 6:65-7:3.) Thus, White discloses that the second communication device that is sent a subscriber approval

request by the first communication device may be selectively chosen based on the card used and the relationship between users (i.e., the request is sent to a remotely located device operated by the owner of a specific card used by the authorized user, or by the parent or boss of that authorized user).

80. Accordingly, White discloses that the consumer's phone (first communication device) has a "mode to communicate by the smartphone information requesting an authorization" to conduct a financial transaction, where the communication mode involves the consumer's phone sending a subscriber approval request ("information requesting an authorization") from the first communication device to a second communication device (e.g., a device corresponding to the owner of the card used for the transaction).

81. In my opinion, a person of ordinary skill in the art would have been motivated to further modify the Barnett-Waters system/method to incorporate such an authorization feature, similar to that disclosed by White, to enable the authorization communication mode and send an authorization request to a second communications device in response to the presentation of the consumer's mobile device in proximity to an NFC-enabled payment terminal. It was well known at the time of the alleged invention that authorization rules could be established such that one individual (or their device) could remotely authorize transactions performed by another individual using a mobile phone. For example, Waters discloses a parent

may set times during which their child is able to use a near field/RF tag enabled device to make payments, e.g., for school lunch. (EX1006, 6; *see also* EX1009, ¶¶[0004], [0022], [0028] (describing transaction approval by the device of an "authorizer"); EX1010, FIG. 1, ¶[0016] (authorizing party may approve e-transactions of a proposing party); EX1011, FIG. 2, Abstract, ¶¶[0011]-[0012] (a third party authorizer/approver (e.g., parent or legal guardian of a child) may approve the purchaser's e-commerce transactions according to certain authorization rules); EX1012, ¶¶[0027], [0050]-[0059] (describing approval of a transaction/funds transfer by a third party, such as a parent); EX1013, Abstract, ¶¶[0174]-[0200] (parent may use their own mobile phone to authorize charges requested by a child's mobile phone).) In my opinion, a person of ordinary skill in the art would have been motivated to consider various authorization methods in order to allow for purchase approval in the Barnett-Waters system/method.

82. White discloses that its authorization method is beneficial because unlike other prior art authorization methods, it allows for an owner of a card/payment method to remotely approve transactions on a more flexible and frequent basis with real-time control. (EX1007, 3:7-21 ("Currently, the owner of a credit card can block or limit available credit to an authorized user of a credit card. The owner may limit an authorized user of the credit card to specific type of purchases and/or types of point-of-sale. The limitations are applied by the credit

card company when a point-of-sale entity attempts to authorize payment from the credit card. The limitations may be defined by the credit card owner. **However, the credit card owner may not readily revise the limitations at any time and/or on a purchase-by-purchase basis….[T]he embodiments discussed below contemplate a system and method for completing a pending purchase at a point-of-sale involving a purchase-by-purchase approval by the owner or controller of the credit card or other financial account, for example by a remote device or individual controlling the remote device.**"), 6:9-64 (describing similar parental approval process on a purchase-by-purchase basis), 6:65-7:30 (describing employer approval process which may be performed with "**real-time control**").) In my opinion, a person of ordinary skill in the art would have understood that White's authorization method would have allowed for enhanced flexibility, while still offering the security benefits of an authorization process that allows a card owner to approve transactions performed by authorized users. In my opinion, a person of ordinary skill in the art would have also understood that White's authorization method would have improved security by increasing oversight of transactions and reducing the risk of unauthorized or inappropriate transactions, consistent with both Barnett's and Waters' security goals. (*Id.*; EX1005, ¶¶[0005], [0012], [0017]; EX1006, 9, 13.)

83. In my opinion, a person of ordinary skill in the art would have also had a reasonable expectation of success combining the teachings of Barnett, Waters, and White. As I discussed above, all three references are in the same field of art. Moreover, Barnett suggests that its system/method is flexible and modifications to the NFC-enabled mobile phone are contemplated. (EX1005, ¶[0044].) In my opinion, a person of ordinary skill in the art would have understood that White's authorization method would have been easily implemented in the Barnett-Waters system/method because Barnett and White use similar technologies. For example, White discloses that the first mobile device may communicate with a second mobile device via wireless network communication such as Internet, voice-based telephony, SMS/MMS, etc. (EX1007, 4:3-25), and Barnett similarly discloses that the consumer's mobile phone can communicate over a cellular network or Wi-Fi system (EX1005, ¶¶[0005], [0012], [0016], [0026], [0027], [0035]). In my opinion, a person of ordinary skill in the art would have recognized that it would have been straightforward to modify the Barnett-Waters system/method to include a feature similar to that disclosed by White, in which the first mobile device communicates (e.g., via cellular or Wi-Fi network) with a remote second mobile device in response to the first device being presented in proximity to an NFC-enabled display/payment terminal.

84. In my opinion, a person of ordinary skill in the art would have had the skill to implement and reasonable expectation of success in achieving such a modification because it would have involved a combination of known technologies (e.g., known systems/methods for performing financial transactions using an NFC-enabled mobile phone (Barnett, Waters)) according to known methods (e.g., known approval mechanisms for authorizing purchases in mobile phone payment systems (White)) to yield the predictable result of a modified Barnett-Waters-White system/method that further implements a process in which, in response to a user presenting their mobile device in proximity to a POS terminal and receiving purchase information in return, an authorization request is sent via cellular/Wi-Fi from the mobile device to a second communication device responsible for approving the transaction.

85. Consistent with the above and in such a combined system, for example, a consumer shopping in a store and using an NFC-enabled mobile phone as a credit/debit card to perform a financial transaction (as taught by Barnett) would have first enabled the NFC tag in the phone by providing a sustained input via, e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor (as taught by Waters). For example, if the device had a combination fingerprint/pressure sensor, the user would hold their fingerprint on a sensor included in the device; if the device had a combination skin resistance/pressure

sensor, the user would press a sensor using their hand; and if the device had a heat sensor, the user would hold the device to provide heat to the sensor. Consistent with Waters' disclosure, the NFC tag of the mobile phone would only be enabled while the mobile device senses at least one physiological parameter (e.g., a fingerprint/pressure combination, a skin resistance/pressure combination, or heat) ("at least one physiological parameter having been sensed") using a phone sensor (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) ("by at least one sensor of the smartphone") and the phone detects that a value of the parameter satisfies some criterion (e.g., a fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat is actively being applied). Thus, in the combined system/method, a user would simultaneously (i.e., while providing sensor input) bring the mobile device in proximity of one of the store's NFC-enabled displays/payment terminals to perform the transaction.

86. Consistent with White's disclosure, the POS terminal would return purchase information (e.g., price) to the consumer's mobile device if the physiological parameter is sensed ("responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone") and the value of the parameter meets a specific criterion, and if the consumer's mobile

device is in close enough proximity to the NFC-enabled POS terminal (i.e., if both conditions for NFC activation and transmission are satisfied) (*see* my analysis above in Sections VIII.A.1.i-ii and below in Section VIII.A.1.v.(1), further discussing the proximity condition). This would trigger the consumer's mobile device to begin an authorization/approval process by sending a subscriber approval request to a specific approver's device (e.g., the owner of the specific card for which the consumer is an authorized user), ("enabling a mode to communicate by the smartphone information requesting an authorization"). Upon approval, the consumer's mobile phone may transmit payment information to the NFC-enabled POS terminal to complete the transaction. Consistent with White's disclosure, the POS terminal sends that payment information to an authorization entity (e.g., financial institution), which returns a response upon authorization, thereby completing the purchasing/approval process.

iii) [1.b] "while the mode is enabled, transmitting by the smartphone first data to a first device, the first data relating to a plurality of financial transactions to be conducted;"

87. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.a], in the Barnett-Waters-White system/method, while communication between a consumer's mobile device ("smartphone") and an approver's device (e.g., card owner's device) ("first device") is enabled ("while the mode is enabled"), a consumer's mobile device

requests authorization for a transaction by sending a subscriber approval request to the approver's device ("transmitting by the smartphone first data to a first device"), upon which a subscriber approval response is returned if the transaction is authorized. (*See* my analysis and discussion in Section VIII.A.1.ii.) The subscriber approval request seeks approval for, and thus is related to, a certain financial transaction ("the first data relating to a…financial transaction[] to be conducted"). (*See* my analysis and discussion in Section VIII.A.1.ii.)

88. While White does not explicitly disclose that its subscriber approval request relates to multiple transactions ("the first data ***relating to a plurality of financial transactions*** to be conducted"), a person of ordinary skill in the art would have been motivated to implement the combined system in view of Barnett and White such that a single authorization (requested via subscriber approval request and received via subscriber approval response) is valid for multiple transactions.

89. Barnett discloses that once payment information is "initially programmed into the mobile phone 14, the configuration of the mobile phone 14…is done automatically simply by placing the mobile phone 14 proximate to the NFC-enabled display 32 so that the desired information may be exchanged between the two." (EX1005, ¶[0032].) Barnett explains that an initial configuration is advantageous because "the consumer does not have to scroll through menus or

follow any other time consuming process simply to configure the mobile phone 14 each time they make a purchase." (*Id.*) In my opinion, a person of ordinary skill in the art would have understood that allowing an approver to authorize a user to perform multiple transactions with just one authorization (e.g., multiple transactions in various stores within a certain geographical area, time period, credit/fund limit, etc.) would have been beneficial because it would have improved user experience and efficiency by reducing the time and complexity to make a purchase after the first authorization is received.

90. In my opinion, a person of ordinary skill in the art would have also been motivated in view of White to allow an approver to authorize multiple transactions at once. White discloses that the subscriber approval request can be approved (e.g., by returning a subscriber approval response) based on various rules. (EX1007, 4:38-42, 5:52-6:64.) These rules may be "resident in the second communication device and/or the first communication device" (*id.*, 3:33-35), and "determine approval of transactions with a point-of-sale on behalf of the first communication device" (*id.*, 3:29-31). The rules can be "based upon a description of a product and/or service, unit value, total cost of pending purchase, and/or other information." (*Id.*, 5:35-38.) In another example, "a parent having the second communication device 130 may establish one or more rules for limiting the available funds of a child having the first communication device 120." (*Id.*, 6:10-

64.) Because White distinguishes between the "total cost of pending purchase" and "the available funds of a child," a person of ordinary skill in the art would have understood "the available funds" to refer to a total sum of funds available, which may be greater than the cost of a single pending purchase and could potentially be allocated for use over multiple future transactions (e.g., allotting a child $10 in available funds for use over multiple smaller transactions). Thus, White suggests that a rule for limiting available funds may be applicable to multiple future transactions. In my opinion, a person of ordinary skill in the art would have recognized that implementing these rules such that one authorization is valid for a certain amount of available funds (potentially relating to multiple transactions until the total authorized funds are spent) would have improved efficiency (e.g., fewer transmissions) and user experience (e.g., reducing the number of requests/approvals, thus simplifying the transaction approval process for both parties), while still offering the security benefits of White's authorization procedure, since the extent of future transactions (e.g., the amount of money that could be spent) would be limited upfront. In my opinion, a person of ordinary skill in the art would have understood that such an implementation would have been consistent with White's goals because White discusses various procedures for allowing parental spending control without requiring the parent to approve each and every transaction (e.g., by implementing fall-back procedures if parental

approval is attempted but cannot be obtained, or in alternate scenarios, by allowing for immediate approval based on certain rules). (EX1007, 6:25-39.)

91. In my opinion, a person of ordinary skill in the art would have also had a reasonable expectation of success in implementing the Barnett-Waters-White system/method in this manner. Barnett suggests that its system/method is flexible and modifications to the NFC-enabled mobile phone are contemplated. (EX1005, ¶[0044].) And as discussed above, White discloses that its authorization methods are flexible enough to be modified to accommodate different rules, approval scenarios, fallback procedures, etc. In my opinion, a person of ordinary skill in the art would have had the skill to implement and reasonable expectation of success in achieving such a modification because it would have involved a combination of known technologies (e.g., known systems/methods for performing financial transactions using an NFC-enabled mobile phone (Barnett, Waters, White)) according to known methods (e.g., known mechanisms for configuring payment in advance (Barnett) and known approval mechanisms for authorizing purchases in mobile phone payment systems (White)) to yield the predictable result of a modified Barnett-Waters-White system/method such that, while communication between a consumer's mobile device and an approver's device is enabled ("while the mode is enabled"), a consumer's mobile device requests authorization for multiple financial transactions (e.g., corresponding to an amount of available

funds) by sending a subscriber approval request to the approver's device ("transmitting by the smartphone first data to a first device"), where the subscriber approval request seeks approval for, and thus is related to, the multiple financial transactions ("the first data relating to a plurality of financial transactions to be conducted"), and where the authorization for the multiple transactions is returned via the subscriber approval response.

iv) [1.c] "receiving by the smartphone second data from the first device responsive to said transmitting by the smartphone the first data, the second data relating to the plurality of financial transactions to be conducted and differing from the first data;"

92. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.a], in the Barnett-Waters-White system/method, the approving device ("first device") may authorize the transaction by returning a subscriber approval response to the consumer's mobile device ("receiving by the smartphone second data from the first device") in response to receiving the subscriber approval request from the consumer's mobile device ("responsive to said transmitting by the smartphone the first data"). (*See* my analysis and discussion in Section VIII.A.1.ii.) As I discussed for limitation [1.b], in the Barnett-Waters-White combination, the consumer's device receives the subscriber approval response ("second data") from the approving device which provides authorization for multiple future transactions ("the second data relating to

the plurality of financial transactions to be conducted") based on certain authorization rules. (*See* my analysis and discussion in Section VIII.A.1.iii.)

93. As further discussed for limitation [1.b], in the Barnett-Waters-White combination, both the subscriber approval request ("first data") seeks approval for, and thus is related to, the multiple transactions. (*See* my analysis and discussion in Section VIII.A.1.iii.) The subscriber approval response ("second data") authorizing the multiple transactions thus also relates to the multiple transactions ("relating to the plurality of financial transactions") for the same reasons. The subscriber approval request transmitted by the consumer's device is different from the subscriber approval response transmitted by the approver's device ("the second data …differing from the first data") because the transmissions themselves are different. (EX1007, 1:41-48, 4:48-55, 6:40-64 (examples of different types of transmissions between the child's and parent's devices).)

v) [1.d] "performing a first transaction of the plurality of financial transactions by:"

94. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitations [1.a], in the Barnett-Waters-White combination, if the transaction is approved, the consumer's device conducts a transaction ("a first transaction"). (*See* my analysis and discussion in Section VIII.A.1.ii.) As I discussed for limitations [1.b]-[1.c], in the Barnett-Waters-White combination, the consumer's device can conduct a transaction after being approved

for multiple transactions ("a first transaction of the plurality of financial transactions"). (*See* my analysis and discussion in Sections VIII.A.1.iii-iv.)

(1) [1.d.i] "detecting by the smartphone that a proximity condition is satisfied between the smartphone and a first entity, wherein the first entity is distinct from the first device;"

95. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.a], in the Barnett-Waters-White combination, the consumer initiates a transaction by bringing their mobile device within a certain proximity (e.g., a decimeter) of the NFC-enabled POS terminal ("detecting by the smartphone that a proximity condition is satisfied between the smartphone and a first entity"). (*See* my analysis and discussion in Section VIII.A.1.ii.) The NFC-enabled POS terminal ("the first entity") is distinct from the approver's device ("the first entity is distinct from the first device").

(2) [1.d.ii] "establishing, using a first air interface, a wireless short-range communications link between the smartphone and the first entity, in response to the proximity condition having been satisfied between the smartphone and the first entity;"

96. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.a], in the Barnett-Waters-White system/method, conducting a transaction requires that the consumer's NFC-enabled mobile phone communicate using NFC ("first air interface") to establish

an NFC link with the NFC-enabled POS terminal ("establishing, using a first air interface, a wireless short-range communications link between the smartphone and the first entity") maintained by a retailer in a store. (*See* my analysis and discussion in Section VIII.A.1.ii.) Barnett explains that the "NFC-enabled display 32 has an NFC interface 58 that is adapted to transmit data between the mobile phone 14 and the display 32." (EX1005, ¶[0038]; *see also id.*, ¶¶[0013] ("NFC is a short-range high frequency wireless communication technology"), [0037] ("The consumer can use the cell phone as a credit card to complete the purchase process by using a NFC-enabled payment register."); *see also* EX1006, 8-9 (disclosing establishing communications based on "Near Field Communication Interface and Protocol (NFCIP-I)").)

97. As I discussed for limitation [1.pre], Barnett discloses that transmission of data between the phone and the NFC-enabled POS terminal occurs only when the two devices are within a short distance (e.g., a decimeter) ("in response to the proximity condition having been satisfied between the smartphone and the first entity"). (*See* my analysis and discussion in Section VIII.A.1.i.) Barnett describes the NFC link as "short-range high frequency wireless communication…which enables the exchange of data between devices over about a short distance, such as a decimeter" ("wireless short-range communications link between the smartphone and the first entity"). (EX1005, ¶[0013].) Barnett explains

that "a connection through a NFC link indicates that the two devices are in close physical proximity to each other." (*Id.*, ¶[0025]; *see also id.*, ¶¶[0031] ("the consumer **places their mobile phone 14 proximate to an NFC-enabled display 32**"), [0032] ("[O]nce this [payment] information is initially programmed into the mobile phone 14, the configuration of the mobile phone 14 as a credit card is done automatically simply by **placing the mobile phone 14 proximate to the NFC-enabled display 32** so that the desired information may be exchanged between the two.").)

(3) [1.d.iii] "receiving, using the first air interface, a short-range signal from the first entity; and"

98. The Barnett-Waters-White combination discloses and/or suggests this limitation. In my opinion, a person of ordinary skill in the art would have understood that in the payment context, where the mobile phone sends information via NFC to the NFC-enabled POS terminal, the phone would establish NFC communication (e.g., to send payment information) in response to receiving, via NFC interface, a short-range RF signal from the NFC-enabled POS terminal ("receiving, using the first air interface, a short-range signal from the first entity"). (*See, e.g.*, EX1005, ¶[0014] (explaining that the mobile phone's NFC tag may act as a "passive tag, allowing a NFC terminal to read the information stored in the mobile phone 14"); EX1006, 9 ("The [near field tag] reader may emit an RF signal to supply power to the [near field] tag to communicate with it if the tag is

'passive.'"); Section VIII.A.1.ii (discussing transmission of payment information to POS terminal).)

(4) [1.d.iv] "responsive to receiving the short-range signal from the first entity, sending by the smartphone to the first entity over the first air interface, information associated with the second data received from the first device; and"

99. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.d.iii], for the consumer's mobile device to provide payment information, the consumer's mobile phone establishes communications with the NFC-enabled POS terminal in response to receiving a short-range RF signal from the NFC-enabled POS terminal ("responsive to receiving the short-range signal from the first entity"). (*See* my analysis and discussion in Section VIII.A.1.v.(3).) As I discussed further for limitation [1.a], in the Barnett-Waters-White system/method, the consumer's phone transmits payment information (e.g., credit card information, debit card information, or electronic purse information) to the NFC-enabled POS terminal to complete the transaction ("sending by the smartphone to the first entity over the first air interface information"). (*See* my analysis and discussion in Section VIII.A.1.ii; *see also* EX1005, ¶[0032]; EX1007, 3:26-31, 4:55-58.)

100. In my opinion, a person of ordinary skill in the art would have understood that the payment information sent from the consumer's phone to the

POS terminal is associated with the subscriber approval response received from the approver's device ("information associated with the second data received from the first device"). White discloses that the POS terminal initially provides the consumer's mobile device with purchase information relating to the transaction. (EX1007, 1:39-41, 4:43-48, 7:16-24.) The consumer's mobile device then sends the approver's device a subscriber approval request that includes purchase information. (*Id.*, 1:41-44, 4:48-52, 7:16-24.) The consumer's mobile device receives a subscriber approval response ("second data") and completes the purchase by providing payment information ("information") to the POS terminal based on the approval ("associated with the second data received from the first device"). (*Id.*, 1:45-48 ("providing payment information from the first communication device to the point-of-sale device to complete the pending purchase based on a subscriber approval response"), 4:52-57, 7:25-45.) In my opinion, a person of ordinary skill in the art would have understood that payment information provided based on the approval response is associated with the approval response ("associated with the second data received from the first device") because the payment information is only sent if the transaction is authorized (i.e., if the approval response is transmitted to the consumer's phone).

vi) [1.e] "independent of performing said first transaction, receiving by the smartphone a communications service from a wireless network, using a second air interface that differs from the first air interface,"

101. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitations [1.pre]-[1.a], in the Barnett-Waters-White combination, the consumer's phone can perform a transaction via NFC ("first air interface"), and as I discussed for limitation [1.pre], the consumer's phone can separately ("independent of performing said first transaction") receive wireless communications/Internet services from a store Wi-Fi network ("receiving by the smartphone a communications service from a wireless network") by using a Wi-Fi interface ("using a second air interface that differs from the first air interface"). (*See* my analysis and discussion in Sections VIII.A.1.i-ii; *see also* EX1005, ¶¶[0015] ("The mobile phone 14 also is **adapted to access a Wi-Fi system** (IEEE 802.11)….Some **applications for Wi-Fi include Internet**…."), [0016] ("The system 10 is adapted to provide information to a consumer's mobile phone 14 within a store without requiring the consumer to incur a mobile phone usage charge. That is, instead of using the data connection on a cellular carrier, the **consumer uses a Wi-Fi network inside the store that has a connection to the Internet**."), [0041] ("[T]he mobile phone 14 has…**Wi-Fi capability**….Inside the mobile phone 14 are…a **Wi-Fi interface**….").)

102. In my opinion, a person of ordinary skill in the art would have understood that the Wi-Fi communications service is received independently of a transaction ("independent of performing said first transaction") because the ability for a consumer phone to use the Wi-Fi network does not depend on whether a transaction has taken place. As described for limitation [1.pre], Barnett's NFC-enabled display 32 can be used for multiple purposes, including providing assistance with initial Wi-Fi configuration, as well as serving as a check-out counter for completing a transaction. (*See* my analysis and discussion in Section VIII.A.1.i.) In my opinion, a person of ordinary skill in the art would have nevertheless understood that the phone's Wi-Fi connection is independent from any transaction because the NFC-enabled display 32 is used only to provide configuration information for one of several automatically and independently detected Wi-Fi networks in a store, and this configuration is not only separate from a transaction but is only required the first time a user visits the store. (EX1005, ¶[0035] ("[I]nformation to enable the consumer to use the store's Wi-Fi system 36 may be retrieved from the NFC-enabled display 32. In this embodiment, all of the **information needed to automatically configure the mobile phone 14 to use the store[']s Wi-Fi system 36 is provided to the mobile phone 14 via the NFC-enabled display 32**. For example, the **mobile phone 14 may detect several Wi-Fi systems**. However, the **information from the NFC-display may enable the**

mobile phone to identify the specific Wi-Fi system in the store and automatically configure the mobile phone 14 accordingly….Once the mobile phone 14 has received the information the first time, **the mobile phone 14 may remember the Wi-Fi connection** and, at subsequent times, remember the Wi-Fi connection, so **the consumer need not stop at the display 32 in the future to configure the mobile phone 14**.").) Moreover, Barnett explains that a consumer's phone can use the Wi-Fi network to perform tasks entirely separate from a transaction, including retrieving information about products (e.g., based on the NFC-enabled product identifier tag 34), accessing store or other websites, or for general entertainment purposes. (EX1005, ¶¶[0026] ("**The store's Wi-Fi system can be used to retrieve more information about products** using the information on the NFC tag located near the product….**The consumer may use the mobile phone 14 to access the websites hosted by the central computing system 26 and/or the store computing systems 28, or any other website**."), [0036] ("The **consumer may use the store's Wi-Fi system 36 to search the Internet**….**Additional shopping information may be obtained by the consumer via the Internet**. For example, the consumer may access a manufacturer's website to obtain additional information about a product. The consumer may also **use the Wi-Fi system 36 for general entertainment purposes**.").)

vii) [1.f] "wherein said transmitting by the smartphone first data and said receiving by the smartphone second data are performed over an air interface[3] that differs from the first air interface."

103. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.a], in the Barnett-Waters-White system/method, a consumer's mobile device sends a subscriber approval request to the approver's device (e.g., the card owner's device) ("said transmitting by the smartphone first data") and receives approval via a subscriber approval response ("said receiving by the smartphone second data") by transmitting and receiving

[3] I have been instructed to assume that "an air interface that differs from the first air interface" is the same "air interface" as the "second interface that differs from the first air interface" recited in limitation [1.e], because without this assumption, it is unclear which "air interface" is being referred to in limitation [7.c], which recites "the air interface that differs from the first air interface." (*See* my analysis and discussion below in Section VIII.A.7.iii.) In my opinion, this assumption is also consistent with the '432 patent specification, which only describes two possible air interfaces. (EX1001, 6:51-7:46.) I have also been asked to consider the alternate scenario in which this limitation requires some third "air interface." Under that assumption, this limitation is met by both a second (Wi-Fi) and third (cellular) air interface.

information over an Internet network, which can be over Wi-Fi (e.g., in the store) or cellular interfaces ("performed over an air interface that differs from the first air interface"). (EX1005, ¶¶[0005], [0012], [0015], [0016], [0027], [0030], [0041]; EX1007, 3:46-54, 4:3-42; *see also* my analysis and discussion in Section VIII.A.1.ii, vi.)

2. Claim 2: "The method of claim 1, wherein establishing the wireless short-range communications link between the smartphone and the first entity is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone."

104. The Barnett-Waters-White combination discloses and/or suggests these limitations. As I discussed for limitations [1.a] and [1.d.ii], in the Barnett-Waters-White system/method, the NFC link between the mobile device and the NFC-enabled POS terminal is established ("establishing the wireless short-range communications link between the smartphone and the first entity") if two conditions for activation/transmission are satisfied: if a physiological parameter (e.g., a fingerprint/pressure combination, skin resistance/pressure combination, or heat) is sensed by a phone's sensor (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, heat sensor) ("responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone") and the value of the parameter satisfies a criterion (e.g., a fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor

combination detects that a human hand is actively pressing the sensor, or heat from the user's hand is actively being applied), and if the consumer's mobile device is in close enough proximity to the NFC-enabled POS terminal. (*See* my analysis and discussion in Sections VIII.A.1.ii, VIII.A.1.v.(2).)

3. Claim 3: "The method of claim 1, wherein sending by the smartphone to the first entity, information associated with the second data, is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone."

105. The Barnett-Waters-White combination discloses and/or suggests these limitations. As I discussed for limitations [1.a] and [1.d.iv], in the Barnett-Waters-White system/method, the mobile device transmits payment information to the POS terminal ("sending by the smartphone to the first entity") and the payment information is associated with the approval received by the consumer's mobile phone ("information associated with the second data"). (*See* my analysis and discussion in Sections VIII.A.1.ii, VIII.A.1.v.(4).) As I discussed for limitation [1.a], the mobile device transmits the payment information to conduct the transaction if several conditions are satisfied: if a physiological parameter (e.g., a fingerprint/pressure combination, skin resistance/pressure combination, or heat) is sensed by a phone's sensor (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) ("responsive to at least one physiological parameter having been sensed by at least one sensor of the

smartphone") and the value of the parameter satisfies a criterion (e.g., a fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat from the user's hand is actively being applied); if the consumer's mobile device is in close enough proximity to the NFC-enabled POS terminal; and if an approval ("second data") from the approving device ("first entity") is sent to the consumer's phone, thereby authorizing the transaction. (*See* my analysis and discussion in Section VIII.A.1.ii.)

4. Claim 4: "The method of claim 1, wherein sending by the smartphone to the first entity, information associated with the second data, is performed responsive to a value of at least one parameter associated with the smartphone."

106. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitations [1.a] and [1.d.iv], in the Barnett-Waters-White system/method, the mobile device transmits payment information to the POS terminal ("sending by the smartphone to the first entity") and the information is associated with the approval received by the consumer's mobile phone ("information associated with the second data"). (*See* my analysis and discussion in Sections VIII.A.1.ii, VIII.A.1.v.(4).) As I discussed for limitation [1.a], the mobile device transmits payment information to conduct the transaction if several conditions are satisfied: if a physiological parameter (e.g., a fingerprint/pressure combination, skin resistance/pressure combination, or heat) is sensed by one of the

sensors (e.g., fingerprint/pressure sensor, skin resistance/pressure sensor, or heat sensor) and a value of the parameter satisfies a criterion (e.g., a fingerprint matches a certain user and the pressure is actively being applied, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the sensor, or heat from the user's hand is actively being applied) ("responsive to a value of at least one parameter associated with the smartphone"); if the consumer's mobile device is in close enough proximity (e.g., within a decimeter) to the NFC-enabled POS terminal ("responsive to a value of at least one parameter associated with the smartphone"); and if an approval from the approving device is sent to the consumer's phone, thereby authorizing the transaction. (*See* my analysis and discussion in Sections VIII.A.1.ii.) In my opinion, a person of ordinary skill in the art would have understood that a value of one of the physiological parameters is "associated with the smartphone" because as I discussed for limitation [1.a], the parameter value measures the user's interaction with the smartphone itself (e.g., a fingerprint matches a certain user and the pressure is actively being applied to the phone, a resistance sensor and pressure sensor combination detects that a human hand is actively pressing the phone, or heat from the user's hand is actively being applied to the phone). In my opinion, a person of ordinary skill in the art would have also understood that the distance (i.e., the proximity) between the phone and POS terminal is a value of a distance parameter and is also "associated with the

smartphone" because the distance between the phone and the POS terminal depends on and is therefore associated with the position of the smartphone itself.

5. Claim 5

i) [5.pre] "The method of claim 1, wherein the method further comprises:"

[5.a] "performing a second transaction of the plurality of financial transactions by"

107. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.b], in the Barnett-Waters-White combination, the mobile device can conduct multiple transactions, such as at different stores for using up the available funds ("performing a second transaction of the plurality of financial transactions"). (*See* my analysis and discussion in Section VIII.A.1.ii.) In my opinion, a person of ordinary skill in the art would have understood that after the consumer's device conducted a first transaction, the consumer's device could attempt to conduct a second transaction. As I discussed for limitation [1.b], rules for approving transactions can be stored on the consumer's device and may allow for immediate approval of a transaction. (*See* my analysis and discussion in Section VIII.A.1.ii.) In my opinion, a person of ordinary skill in the art would have recognized that in the Barnett-Waters-White combination, rules stored on the consumer's device could be used to automatically

approve transactions if funds remained available (based on the initial authorization for the first transaction) to conduct a second transaction.

(1) [5.a.i] "detecting by the smartphone that a proximity condition is satisfied between the smartphone and a second entity, wherein the second entity is distinct from the first entity and is further distinct from the first device;"

108. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.d], in the Barnett-Waters-White combination, the consumer initiates a transaction by bringing their mobile device within proximity of the NFC-enabled POS terminal ("detecting by the smartphone that a proximity condition is satisfied between the smartphone and a second entity"). (*See* my analysis and discussion in Section VIII.A.1.v.) As the consumer can use their mobile device to conduct transactions at different stores, the NFC-enabled POS terminal at one store is distinct from the NFC-enabled POS terminal at another store ("the second entity is distinct from the first entity") and from the approver's device ("the second entity…is further distinct from the first device").

(2) [5.a.ii] "establishing, using the first air interface, a wireless short-range communications link between the smartphone and the second entity, in response to the proximity condition having been satisfied between the smartphone and the second entity;"

109. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.d.ii], in the Barnett-Waters-White

combination, performing a transaction involves establishing, using the NFC interface, an NFC link between the mobile phone and an NFC-enabled POS terminal ("establishing, using the first air interface, a wireless short-range communications link between the smartphone and the second entity") in response to the phone being brought within a certain proximity (e.g., within a decimeter) of the POS terminal ("in response to the proximity condition having been satisfied between the smartphone and the second entity"). (*See* my analysis and discussion in Section VIII.A.1.v.(2) (reciting nearly identical limitation with respect to a "first entity" rather than a "second entity").) In my opinion, a person of ordinary skill in the art would have understood that this establishment of a link occurs in the same way for some second POS terminal ("second entity") as it does for the first POS terminal ("first entity") in limitation [1.d.ii].

(3) [5.a.iii] "receiving, using the first air interface, a short-range signal from the second entity; and"

110. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.d.iii], in the Barnett-Waters-White combination, the NFC-enabled mobile phone would receive, using the NFC interface, an NFC signal from the NFC-enabled POS terminal ("receiving, using the first air interface, a short-range signal from the second entity") before the payment information can be provided. (*See* my analysis and discussion in Section VIII.A.1.v.(3) (reciting nearly identical limitation with respect to a "first entity"

rather than a "second entity").) In my opinion, a person of ordinary skill in the art would have understood that some second POS terminal ("second entity") sends the NFC signal in the same way the first POS terminal ("first entity") sends the signal in limitation [1.d.iii].

(4) **[5.a.iv] "responsive to receiving the short-range signal from the second entity, sending by the smartphone to the second entity over the first air interface, information associated with the second data received from the first device."**

111. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.d.iv], in the Barnett-Waters-White combination, after receiving the RF signal from the NFC-enabled POS terminal ("responsive to receiving the short-range signal from the second entity"), the mobile device would transmit payment information to the POS terminal via NFC interface ("sending by the smartphone to the second entity over the first air interface"), where the payment information would be associated with the subscriber approval response received from the approver's device ("information associated with the second data received from the first device") by the consumer's mobile phone. (*See* my analysis and discussion in Section VIII.A.1.v.(4) (reciting nearly identical limitation with respect to a "first entity" rather than a "second entity").) In my opinion, a person of ordinary skill in the art would have understood that the phone would receive a RF signal from some second POS

terminal ("second entity") in the same way as it receives a RF signal from the first POS terminal ("first entity") in limitation [1.d.iv].

6. Claim 6

i) [6.pre] "The method of claim 1,"

[6.a] "wherein said transmitting by the smartphone first data to a first device includes transmitting by the smartphone data relating to a request to pay for a transaction; and"

112. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.a], in the Barnett-Waters-White system/method, a consumer's mobile device sends a subscriber approval request to the approver's device ("transmitting by the smartphone first data to a first device") that includes purchasing information to request approval of the purchase ("transmitting by the smartphone data relating to a request to pay for a transaction"). (*See* my analysis and discussion in Section VIII.A.1.ii.)

ii) [6.b] "wherein said receiving by the smartphone second data from the first device includes receiving by the smartphone data relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a transaction."

113. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.a], the approving device ("first device") may authorize the transaction by returning a subscriber approval response ("second data") to the consumer's mobile device ("wherein said receiving by the smartphone

second data from the first device"). (*See* my analysis and discussion in Section VIII.A.1.ii.) As I discussed, this approval response provides the consumer's phone with the authorization which allows/enables the phone to pay for a transaction ("receiving by the smartphone data relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a transaction").[4] The receipt

[4] In my opinion, the capability to pay for a transaction is a "function" to pay for a transaction, consistent with the "functions" described in the '432 patent, which describes "functions" broadly as encompassing an "ever-increasing suite" of features/tasks, including payment functions. (EX1001, 1:32-36 ("People are relying more and more on mobile wireless devices to perform an ever-increasing suite of function such as, for example, navigation, e-mail, web surfing, streaming video, etc."), 4:34-6:10 (enabling a "pay toll" function), 8:12-62 (enabling a "pay" function), 9:14-24 (describing a "function" broadly as "any number of functions at the mobile subscriber device 14 or even at the mobile subscriber device 15" (i.e., at first or second mobile device), and explaining that the "function enabled can be a financial transaction, the transmission of communications, such as data, and/or some other function that may provision the mobile subscriber device 14 and/or the mobile subscriber device 15 with additional functionality not previously available/activated at the respective devices").)

of the subscriber approval response also serves as an acknowledgment to the subscriber approval request. Thus, receipt of the subscriber approval response by the mobile device in the Barnett-Waters-White system includes receiving data "relating to an acknowledgement and/or authorization" to enable the capability to pay for a transaction, as claimed.

7. Claim 7

i) [7.pre] "The method of claim 1, comprising:"

[7.a] "transmitting by the smartphone third data to a second device; the second device being distinct from the first device and further being distinct from the first entity; and"

114. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.a], in the Barnett-Waters-White system/method, the consumer's mobile device requests authorization for a transaction by sending a subscriber approval request. (*See* my analysis and discussion in Section VIII.A.1.ii.) As further discussed for limitation [1.a], White further discloses that "the first communication device 120 may direct an approval request to the proxy subscriber approval server 140" ("transmitting by the smartphone third data to a second device"). (EX1007, 4:59-63; my analysis and discussion in Section VIII.A.1.ii.) "The proxy subscriber approval server 140 performs the approval that otherwise the second communication device 130 would provide" ("the second device being distinct from the first device"). (EX1007, 4:63-

66; *see also id.,* 4:66-5:53, 6:27-39; my analysis and discussion in Section VIII.A.1.ii.) The proxy subscriber approval server 140 is also distinct from the POS terminal ("and further being distinct from the first entity"). (EX1007, 3:46-54, 5:23-29, 5:57-60.)

ii) [7.b] "receiving by the smartphone fourth data from the second device relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a financial transaction,"

115. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.a], in the Barnett-Waters-White system/method, the approving device, which can be another device such as a proxy subscriber approval server ("second device") in lieu of an approver's (e.g., parent's) device, may authorize the transaction by returning a subscriber approval response to the consumer's mobile device ("receiving by the smartphone fourth data from the second device"). (*See* my analysis and discussion in Section VIII.A.1.ii.) As I discussed, this approval response provides the consumer's phone with the authorization to enable the capability to pay for a transaction ("relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a financial transaction"). The receipt of the subscriber approval response also serves as an acknowledgment to the subscriber approval request. Thus, receipt of the subscriber approval response by the mobile device in the Barnett-Waters-White system includes receiving data "relating to an acknowledgement and/or

authorization" to enable the capability to pay for a financial transaction, as claimed.

iii) [7.c] "wherein said transmitting by the smartphone third data to a second device and said receiving by the smartphone fourth data from the second device are performed over the air interface[5] that differs from the first air interface."

116. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.a], in the Barnett-Waters-White system/method, a consumer's mobile device sends a subscriber approval request to the server device ("wherein said transmitting by the smartphone third data to a second device") and receives approval via a subscriber approval response ("said receiving by the smartphone fourth data from the second device") by wirelessly transmitting and receiving information over Wi-Fi (e.g., store's Wi-Fi network) or

[5] As I discussed in the footnote for limitation [1.f], I have been instructed to assume that "the air interface that differs from the first air interface" recited in limitation [7.c] is the same "air interface" as the "second interface that differs from the first air interface" recited in limitation [1.e], rather than some third "air interface," but to the extent this limitation requires some third "air interface," this limitation is met by both a second (Wi-Fi) and third (cellular) air interface. (*See* Section VIII.A.1.vii.)

cellular interfaces that are different from NFC ("performed over the air interface that differs from the first air interface"). (*See* my analysis and discussion in Section VIII.A.1.vii.)

8. Claim 9: "The method of claim 1, wherein the second air interface comprises an Orthogonal Frequency Division Multiplexed and/or an Orthogonal Frequency Division Multiple Access (OFDM/OFDMA) technology."

117. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.e], Barnett discloses that the consumer's device can operate over a Wi-Fi interface ("second air interface"). (*See* my analysis and discussion in Section VIII.A.1.vi.) Barnett explains that the consumer's mobile phone is adapted to access the Wi-Fi system in accordance with IEEE 802.11 standards. (EX1005, ¶¶[0005] ("A mobile phone is provided that…is also adapted to communicate with one or more additional wireless communication systems, such as…**IEEE 802.11, Wi-Fi**…."), [0015] ("The mobile phone 14 also is **adapted to access a Wi-Fi system (IEEE 802.11)**.").) In my opinion, a person of ordinary skill in the art would have understood that at the time of the alleged invention, the IEEE 802.11 family standards specified that Wi-Fi interfaces used OFDM technology. (EX1019, ¶[0002] ("Orthogonal frequency division multiplexing (OFDM) is a modulation technique for wireless LAN standards such as IEEE 802.11"); EX1020, ¶[0008] ("Owing, at least in part, to its superior performance, OFDM modulation has been adopted in various standards, most

notably…IEEE LAN (802.11 and 802.g)…."); *see also* EX1021 (IEEE Std 802.11a-1999, part of the IEEE 802.11 family).) Accordingly, the Barnett-Waters-White combination discloses and/or suggests that the consumer phone's Wi-Fi interface comprises OFDM technology ("the second air interface comprises an Orthogonal Frequency Division Multiplexed and/or an Orthogonal Frequency Division Multiple Access (OFDM/OFDMA) technology").

9. Claim 10

i) [10.pre] "A smartphone that is configured to perform operations associated with a plurality of financial transactions; the operations comprising:"

118. I understand that this limitation is a preamble of the claim and I have been asked to assume that the preamble of claim 10 is limiting. Under that assumption, it is my opinion that Barnett discloses the limitations therein.

119. As I discussed for limitation [1.pre], Barnett discloses a mobile phone ("smartphone") with "smart" features to perform the functions of a Wi-Fi device, a contact-less credit/debit card, and a cell phone. (*See* my analysis and discussion in Section VIII.A.1.i.) As further discussed for limitation [1.pre], the phone is configured such that, in response to a consumer bringing the phone within a short distance of the NFC interface of the NFC-enabled display 32 (serving as an NFC-enabled payment register) at a variety of locations or stores, the phone enables NFC transmission between the phone and display 32, thus establishing the

capability at the phone to perform a purchase/transaction at the NFC display 32. As I discussed, because the phone is programmed with a plurality of credit card numbers and can automatically use the appropriate one in each store, the phone can be used to perform a plurality of transactions ("configured to perform operations associated with a plurality of financial transactions"). (*See* my analysis and discussion in Section VIII.A.1.i.)

ii) [10.a] "responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone, enabling a mode to communicate by the smartphone information requesting an authorization;"

120. The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as I discussed for limitation [1.a]. (*See* my analysis and discussion in Section VIII.A.1.ii.)

iii) [10.b] "while the mode is enabled, transmitting first data to a first device as a precursor to performing the plurality of financial transactions; and"

121. The Barnett-Waters-White combination discloses and/or suggests this limitation. As I discussed for limitation [1.b], while communication between a consumer's mobile device and an approver's device (e.g., card owner's device) is enabled ("while the mode is enabled"), a consumer's mobile device requests authorization for a transaction by sending a subscriber approval request to the approver's device ("transmitting first data to a first device"). (*See* my analysis and

discussion in Section VIII.A.1.iii.) As further discussed, the subscriber approval response authorizing the transaction that is returned to the consumer's phone may be valid for multiple transactions ("plurality of financial transactions"). The subscriber approval request must also be transmitted to the approving device ("transmitting first data to a first device") before the smartphone is approved to perform multiple transactions ("as a precursor to performing the plurality of financial transactions"). For example, after transmitting the approval request, the requesting device can obtain authorization to perform multiple transactions until the total authorized funds are spent to avoid having to obtain authorization for each individual transaction.

iv) [10.c] "receiving second data from the first device responsive to said transmitting the first data;"

122. The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as I discussed for limitation [1.c]. (*See* my analysis and discussion in Section VIII.A.1.iv.)

v) [10.d] "performing a first financial transaction of the plurality of financial transactions by:

[10.d.i] detecting by the smartphone that a proximity condition is satisfied between the smartphone and a first entity, wherein the first entity is distinct from the first device;

[10.d.ii] establishing, using a first air interface, a wireless short-range communications link between the smartphone and the first entity, in response to the proximity condition having been satisfied between the smartphone and the first entity;

[10.d.iii] receiving, using the first air interface, a short-range signal from the first entity; and

[10.d.iv] responsive to receiving the short-range signal from the first entity, sending to the first entity over the first air interface, information based on the second data received from the first device; and"

123. The Barnett-Waters-White combination discloses and/or suggests these limitations for the same reasons as I discussed for limitations [1.d] and [1.d.i]-[1.d.iv]. (*See* my analysis and discussion in Section VIII.A.1.v.)

vi) [10.e] "independent of performing a transaction to pay for one or more items, receiving by the smartphone a communications service from a wireless network, using a second air interface that differs from the first air interface,"

124. The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as I discussed for limitation [1.e]. (*See* my analysis and discussion in Section VIII.A.1.vi.)

vii) [10.f] "wherein said transmitting first data and said receiving second data are performed over an air interface that differs from the first air interface."

125. The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as I discussed for limitation [1.f]. (*See* my analysis and discussion in Section VIII.A.1.vii.)

10. Claim 11: "The smartphone of claim 10, wherein establishing the wireless short-range communications link between the smartphone and the first entity is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone."

126. The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as I discussed for claim 2. (*See* my analysis and discussion in Section VIII.A.2.)

11. Claim 12: "The smartphone of claim 10, wherein sending by the smartphone to the first entity, information based on the second data, is performed responsive to at least one physiological parameter having been sensed by at least one sensor of the smartphone."

127. The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as I discussed for claim 3. (*See* my analysis and discussion in Section VIII.A.3.)

12. Claim 13: "The smartphone of claim 10, wherein sending by the smartphone to the first entity, information based on the second data, is performed responsive to a value of at least one parameter associated with the smartphone."

128. The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as I discussed for claim 4. (*See* my analysis and discussion in Section VIII.A.4.)

13. Claim 14

i) [14.pre] "The smartphone of claim 10, wherein the operations further comprise:"

[14.a] "performing a second financial transaction of the plurality of financial transactions by:"

[14.a.1] "detecting by the smartphone that a proximity condition is satisfied between the smartphone and a second entity; wherein the second entity is distinct from the first entity and is further distinct from the first device."

[14.a.2] "establishing, using the first air interface, a wireless short-range communications link between the smartphone and the second entity, in response to the proximity condition having been satisfied between the smartphone and the second entity;"

[14.a.3] "receiving, using the first air interface, a short-range signal from the second entity; and"

[14.a.4] "responsive to receiving the short-range signal from the second entity, sending by the smartphone to the second entity over the first air interface; information associated with the second data received from the first device."

129. The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as I discussed for limitations [5.pre]-[5.a]. (*See* my analysis and discussion in Section VIII.A.5.i.)

14. Claim 15

i) [15.pre] "The smartphone of claim 10,"

[15.a] "wherein said transmitting by the smartphone first data to a first device includes transmitting by the smartphone data relating to a request to pay for a transaction; and"

[15.b] "wherein said receiving by the smartphone second data from the first device includes receiving by the smartphone data relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a transaction."

130. The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as I discussed for limitations [6.pre]-[6.b]. (*See* my analysis and discussion in Sections VIII.A.6.i-ii.)

15. Claim 16

i) **[16.pre] "The smartphone of claim 10, wherein said operations further comprise:"**

[16.a] "transmitting third data to a second device; the second device being distinct from the first device and further being distinct from the first entity; and"

[16.b] "receiving by the smartphone fourth data from the second device relating to an acknowledgement and/or authorization of enabling a mode/function to pay for a financial transaction;"

[16.c] "wherein said transmitting by the smartphone third data to a second device and said receiving by the smartphone fourth data from the second device are performed over the air interface that differs from the first air interface."

131. The Barnett-Waters-White combination discloses and/or suggests this limitation for the same reasons as I discussed for limitations [7.pre]-[7.c]. (*See* my analysis and discussion in Sections VIII.A.7.i-iii.)

B. Barnett in View of Waters, White, and Smith Disclose and/or Suggest Claims 8 and 17

1. Claim 8

i) [8.pre] "The method of claim 1, wherein said operations further comprise:"

[8.a] "responsive to performing a financial transaction, causing data to be transmitted selectively to a plurality of predetermined devices and further causing data to be received selectively from said plurality of predetermined devices."

132. Barnett in view of Waters, White, and Smith discloses and/or suggests this limitation.

133. As I discussed for limitation [1.a], in the Barnett-Waters-White combination, after a mobile phone performs a financial transaction ("responsive to performing a financial transaction"), e.g., by sending payment information to the POS terminal device (*see* Sections VIII.A.1.v.(1)-(4) (describing steps of performing a transaction)), the payment information is further sent to a financial institution's device ("causing data to be transmitted selectively to a…predetermined device[]"), since the POS terminal forwards the payment information to an authorization entity such as a financial institution. (*See* my analysis and discussion in Section VIII.A.1.ii.) In my opinion, a person of ordinary skill in the art would have understood that this financial institution device would have corresponded to the issuer of the card used for the transaction, and thus

payment information would have been transmitted "selectively" to a "predetermined" financial institution's device based on the card used for the transaction.

134. While the Barnett-Waters-White combination does not explicitly disclose and/or suggest "responsive to performing a financial transaction, causing data to be transmitted selectively to ***a plurality*** of predetermined devices and ***further causing data to be received selectively from said plurality of predetermined devices***," the Barnett-Waters-White combination further in view of Smith discloses and/or suggests these bolded/italicized features.

135. As I discussed for limitation [1.a], White discloses that after the consumer's mobile phone sends payment information to the POS device, the POS device sends the payment information to an authorization entity (e.g., a device of a predetermined financial institution), which returns a response upon authorization to complete the payment approval process. (my analysis and discussion in Section VIII.A.1.ii.(2); EX1007, 3:31-39 ("Following approval, **authorization is requested from the credit card company by the point-of-sale system**, typically through normal means."), 3:56-58 ("In credit card transactions, **the POS device 102 may communicate with a credit card payment system to obtain** payment or **payment authorization**."), 7:40-44 ("The **POS device 102** receives payment information from the subscriber approval client 122, **submits this payment**

information to an authorization entity, such as a financial institution, and receives a response back from the authorization entity.").) However, White does not disclose what the authorization response is used for, or which devices receive the response. In my opinion, a person of ordinary skill in the art would have thus had good reason to consider Smith's implementation, which as I discuss below, discloses that the response returned by the authorization entity is used by the point-of-sale terminal to generate and transmit a receipt to the consumer's phone.

136. Like Barnett, Waters, and White, Smith discloses a system/method of using a mobile device to perform a financial transaction at a point-of-sale device. Smith relates to "[e]lectronic transactions involving the transfer of money," including those involving "[g]oods and services…purchased…using credit or debit accounts with electronic authorization." (EX1018, 1:17-20.) Smith describes electronic transactions occurring between a "purchaser device" (e.g., a "wireless purchasing device (WPD)") and a "vendor device at a point-of-sale." (*Id.*, 4:5-21.) The wireless purchaser device "may take the form of a personal digital assistant (PDA), a wireless phone or some other wireless communication device." (*Id.*, 4:19-21.) Smith explains that the wireless purchaser device and the vendor point-of-sale device may operate in a wireless system, where communication between the two devices may occur through various short-range wireless networking technologies.

(*Id.*, 4:22-26 ("Alternate scenarios include purchasing an item using a **wireless point-of-sale system**. With this transaction, receipt is transferred from the vendor to the wireless point-of-sale device over a **wireless system** such as Bluetooth® or IrDA connection. Under this scenario no direct Internet connection is required as the **information is transferred directly over a wireless connection over the WPD and the vendor**."), 6:12-20 ("**WPD 2 may communicate with other electronic devices using a short range communications device 14 and may be used to communicate with a vendor's point-of-sale device, such as wireless vending device (WVD) 20**, with other WPDs, with external communication devices or with other electronic devices. However, the key function of **short range communications device 14** is to communicate with WVDs and to receive electronic receipt information therefrom. **Short range communications device 14 may be a Bluetooth® transceiver or similar short range networking device** or may be an Infrared transceiver such as an IrDA standard port as well as other devices."), 6:30-7:6 ("Embodiments of the present invention also comprise a wireless vendor device (WVD) 20 which is typically positioned at a point-of-sale for communication with WPDs. **WVD 20 will generally comprise a short range communications device 14 used in WPDs.** As with communications device 14, device 24 may be a Bluetooth® transceiver, an IrDA port or another communications device….**Short range communications device 24 is connected**

to a vendor device 22 which is typically an electronic computing device such as an electronic cash register, an electronic vending machine, a bar-code reader or other device which may transmit and receive product and transaction information and transmit electronic receipt information.").) Thus, Smith is similar to Barnett, Waters, and White, which also disclose systems/methods of purchasing products at a point-of-sale terminal using short-range wireless communication technologies (e.g., NFC). (*See* my analysis and discussion in Sections VIII.A.1.i, VIII.A.1.ii.(1)-(2).) In my opinion, a person of ordinary skill in the art would have therefore been motivated to consider the teachings of Smith when implementing the Barnett-Waters-White system/method.

137. Smith additionally discloses that its system/method allows for the vendor point-of-sale device to transmit electronic receipts to the purchaser device after a transaction is authorized and completed. Smith explains that "[t]ransactions involving a credit or debit account require authorization from the organization who issues the card," where "authorization is generally obtained at the point-of-sale by a vendor through electronic communications channels." (EX1018, 1:26-28.) Smith discloses that purchase/account information is transmitted to a card issuer or authorization provider, and the vendor may in return receive an authorization code if the transaction is successful (i.e., if the account has sufficient credit/funds to cover the transaction). (*Id.*, 1:28-34 ("A transaction amount is determined and the

amount of the transaction along with the account identification information are transmitted to the organization which issued the card or an authorization provider (AP). **If the account has sufficient credit or funds to cover the transaction amount** and the account has not been deactivated for some other reason, **the card issuer will send an authorization code to the vendor or AP** which indicates that the issuer will transfer the authorized amount to the vendor at an appropriate time."), 2:2-5 ("These **point-of-sale authorization request devices are typically connected to the card issuers or their representatives, sometimes known as authorization processors (APs)**, through a conventional telephone line. Often a dedicated phone line is connected to the point-of-sale authorization device for quick access to authorization data."), 9:4-30 ("**An authorization processor 30 takes requests from devices such as wireless purchasing device 2 and either forwards an authorization in response to the request or forwards a denia**l….Once the funds have been transferred, **a transfer verification would be forwarded back to the authorization processor back to wireless purchasing device 2 and forwarded to wireless vending device 61**.").)

138. Following authorization by the card issuer or authorization processor, Smith discloses that "an electronic receipt will be generated by a vendor device at a point-of-sale." (*Id.*, 4:5-6.) "When a transaction takes place, an electronic receipt may be transmitted from the vendor device to a purchaser device where the receipt

may be stored for further processing within the device or for further transmission to other devices and systems." (*Id.*, 4:6-8; *see also id.*, 4:15-17 ("The electronic receipt will generally be transmitted to a purchaser device and, in preferred embodiments, to a wireless purchasing device (WPD) which can store and manipulate the electronic receipt.").) Smith explains that the receipt is transmitted from the point-of-sale device to the purchaser device using the short-range wireless connection. (*Id.*, 4:23-24 ("**[R]eceipt is transferred from the vendor to the wireless point-of-sale device over a wireless system** such as Bluetooth® or IrDA connection."), 6:16-17 ("**[T]he key function of short range communications device 14** is to communicate with WVDs and **to receive electronic receipt information therefrom**."), 7:6-8 ("**WVD 20 may communicate electronic receipt information** or other information **via short range transceiver 24….**").)

139. Smith discloses that the receipt generated at the point-of-sale device may include "authorization information," as well as other "purchase transaction information including, but not limited to, total purchase price, vendor ID, purchaser ID, item descriptions, itemized pricing, purchase date, purchase time, discount information, creditor information, …, receipt management information and other transaction information." (*Id.*, 7:34-8:3; *see also id.*, 3:33-4:2.) Smith also discloses that the purchaser device may "transfer…receipt information…to [a] secondary computing device 30 for further processing, storage, archiving and other

functions." (*Id.*, 8:12-14.) The secondary computing device 30 may be a "web server 42" that can "compile[] receipt information including itemized and categorized purchase and budget information" and later "transmit compiled information 48 back to purchaser device 2 for display and reference." (*Id.*, 8:15-23; *see also id.*, 7:10-23.)

140. Thus, Smith discloses that after a consumer's phone performs a transaction ("responsive to performing a financial transaction"), e.g., by sending payment information to the POS terminal device (*see* Sections VIII.A.1.v.(1)-(4) (describing steps of performing a transaction)), the payment information may be selectively transmitted (e.g., based on the credit card used) to a device of a predetermined financial institution ("causing data to be transmitted selectively to a…predetermined device[]"), and the phone may receive a receipt from the vendor point-of-sale device used in the transaction, where the receipt received by the consumer's phone may also include authorization information selectively received from an authorization entity/device (e.g., based on the credit card used) ("further causing data to be received selectively from said…predetermined device[]"). As further discussed above, after a consumer's phone performs a transaction ("responsive to performing a financial transaction"), the consumer's phone may transmit receipt to a predetermined secondary computing device used for compiling receipt information ("causing data to be transmitted selectively to…a

predetermined device[]"), and may further receive compiled receipt information from that same secondary computing device after the transaction is complete ("further causing data to be received selection from said…predetermined device[]"). In other words, Smith discloses that after a transaction is performed, information is selectively transmitted to and received from both a device of a predetermined financial institution and a predetermined secondary computing device ("responsive to performing a financial transaction, causing data to be transmitted selectively to a plurality of predetermined devices and further causing data to be received selectively from said plurality of predetermined devices").

141. In my opinion, a person of ordinary skill in the art would have been motivated to modify the Barnett-Waters-White combination to use the response returned by the authorization entity to provide a receipt, similar to that disclosed by Smith, so that after completing a transaction, a consumer's phone may receive the receipt for the transaction, as well as compiled information relating to multiple transactions. In my opinion, a person of ordinary skill in the art would have understood that providing a receipt to a consumer would have offered numerous benefits, including providing proof of purchase, the amount of the purchase, and a record of the transaction for tracking purposes, as well as providing a means for consumers to later make a return or exchange of the purchased goods.

142. In addition, it is my opinion that a person of ordinary skill in the art would have understood that allowing a consumer to later retrieve compiled receipt information from a secondary computing device (e.g., web server), similar to that disclosed by Smith, would have had organizational and efficiency benefits as well, as it would have allowed a user to more effectively track purchases and manage/budget their finances. Indeed, Smith discloses that "[w]eb server 42 may further provide banking, automated bill payment, tax preparation and other financial services in connection with receipt information management." (EX1018, 8:18-20.) A person of ordinary skill in the art would have thus understood that these financial planning and management tasks would have been enhanced by the ability for a consumer's phone to receive receipt information, including individual receipts from a point-of-sale terminal and compiled receipts from a secondary computing device/server.

143. In my opinion, a person of ordinary skill in the art would have also had a reasonable expectation of success combining the teachings of Barnett, Waters, White, and Smith. As I discussed above, both references are in the same field of art. Moreover, Barnett suggests that its system/method is flexible and modifications to the NFC-enabled mobile phone are contemplated. (EX1005, ¶[0044].) Smith similarly discloses that its receipt feature can be adapted to a variety of short-range wireless communication methods. (EX1018, 4:22-26, 6:12-

20, 6:30-7:6.) In my opinion, a person of ordinary skill in the art would have understood that it would have been straightforward to modify the NFC-based system of the Barnett-Waters-White combination to include a receipt feature similar to that disclosed by Smith.

144. In my opinion, a person of ordinary skill in the art would have had the skill to implement and reasonable expectation of success in achieving such a modification because it would have involved a combination of known technologies (e.g., known system/method for performing financial transactions using an NFC-enabled mobile phone (Barnett, Waters, and White)) according to known methods (e.g., known methods of transmitting/receiving receipt information between a POS terminal, financial institution device, and secondary computing device (Smith)) to yield the predictable result of a modified Barnett-Waters-White-Smith system/method that implements a receipt feature in which payment information is forwarded to an authorization entity, receipt information is received by the phone from a POS terminal (including authorization information from an authorization entity), and compiled receipt information is sent to and received from a secondary computing device/server.

2. Claim 17

i) [17.pre] "The smartphone of claim 10, wherein said operations further comprise:"

[17.a] "responsive to performing a financial transaction, causing data to be transmitted selectively to a plurality of predetermined devices and further causing data to be received selectively from said plurality of predetermined devices."

145. The Barnett-Waters-White-Smith combination discloses and/or suggests this limitation for the same reasons as discussed for limitations [8.pre]-[8.a]. (*See* my analysis and discussion in Sections VIII.B.1.i.)

IX. CONCLUSION

146. 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.

Dated: August 14, 2025 By: _____

Sandeep Chatterjee