IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PAYPAL HOLDINGS, INC. AND PAYPAL, INC.,
Petitioners,

v.

FINTIV, INC.
Patent Owner.

Case No. IPR2023-00744
U.S. Patent No. 8,538,845

DECLARATION OF DR. SANDEEP CHATTERJEE IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,538,845

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TABLE OF ABBREVIATIONS AND CONVENTIONS

Petitioners	PAYPAL HOLDINGS, INC. AND PAYPAL, INC. ("PayPal")
Patent Owner	FINTIV, INC. ("Fintiv")
'845 Patent or Challenged Patent	U.S. Patent No. 8,538,845 (the patent being challenged herein)
Challenged Claims	Claims 1-3 and 5-7
POSA	Person of Ordinary Skill in the Art
FICs	Plaintiff's Final Infringement Contentions (Ex-1011)

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PETITIONERS' EXHIBIT LIST

Ex- No.	Brief Description
1001	U.S. Patent No. 8,538,845
1002	File History of U.S. Patent No. 8,538,845
1003	Declaration of Dr. Sandeep Chatterjee
1004	*Curriculum Vitae* of Dr. Sandeep Chatterjee
1005	US Publication No. 2007/0255620 ("Tumminaro")
1006	US Publication No. 2006/0253335 ("Keena")
1007	U.S. Publication No. 2011/0137789 ("Kortina")
1008	US Publication No. 2008/0270246 ("Chen")
1009	Original Complaint for Patent Infringement in *Fintiv, Inc. v. PayPal Holdings, Inc.*, 6:22-cv-00288-ADA (W.D. Tex.)
1010	Proof of Service of Complaint for Patent Infringement in *Fintiv, Inc. v. PayPal Holdings, Inc.*, 6:22-cv-00288-ADA (W.D. Tex.)
1011	Fintiv's Final Infringement Chart for U.S. Patent No. 8,538,845 in *Fintiv, Inc. v. PayPal Holdings, Inc.*, 6:22-cv-00288-ADA (W.D. Tex.)
1012	Final Claim Constructions of the Court in *Fintiv, Inc. v. PayPal Holdings, Inc.*, 6:22-cv-00288-ADA (W.D. Tex.)
1013	"Social Payment Startup Venmo Raised $1.2 Million And Has A New iPhone App," published September 16, 2010, available at https://techcrunch.com/2010/09/16/venmo-1-2-million-iphone/
1014	Plaintiff Fintiv, Inc.'s Proposed Terms for Construction, 6:22-cv-00288-ADA (W.D. Tex.)

Ex- No.	Brief Description
1015	"Green Dot and Chase Paymentech Offer Merchants an Alternative Cash Payment Solution," published October 2007, available at https://www.digitalcommerce360.com/2007/10/18/green-dot-and-chase-paymentech-offer-merchants-an-alternative-ca/
1016	"PayPal Launches Revamped iPhone App, Teams With Bump For Phone-Tapping Money Transfers," published March 2010, available at https://techcrunch.com/2010/03/15/paypal-iphone-app-bump
1017	Green Dot Money Pak "Using MoneyPak," available at https://web.archive.org/web/20110129061302/https://www.moneypak.com/
1018	Green Dot Money Pak "How Adding Funds to PayPal Works," available at https://web.archive.org/web/20111009200217/https://www.moneypak.com/PayPal/Index.aspx
1019	Office of Foreign Assets Control (OFAC) – Sanctions Programs and Information, available at https://home.treasury.gov/policy-issues/office-of-foreign-assets-control-sanctions-programs-and-information
1020	Prior et al., "BANKING THE UNBANKED USING PREPAID PLATFORMS AND MOBILE TELEPHONES IN THE UNITED STATES, Working Paper WP-839" IESE Business School, University of Navarra, January 2010.
1021	"Mobile Money for the Unbanked" produced as PAYPAL-FINTIV00004567
1022	2009 MIT Sloan article, "The Economics of M-PESA." Produced as PAYPAL-FINTIV000004407
1023	PAYPAL-FINTIV000006705: "PayPal Application Available on Apple App Store at Launch," July 10, 2008, available at:

Ex- No.	Brief Description
	https://newsroom.ie.paypal-corp.com/2008-07-10-PayPal-Application-Available-on-Apple-App-Store-at-Launch
1024	Bànegns et al., Mobile Banking – Financial Services for the Unbanked?, The Swedish Program for ICT in Developing Regions (SPIDER), 2008, produced as PAYPAL-FINTIV000004353
1025	Baptista et al., Unleashing the Power of Convergence to Advance Mobile Money Ecosystems, Mobile Money Summit 2010, International Finance Corporation (IFC) and Harvard Kennedy School, 2010, produced as PAYPAL-FINTIV000004435
1026	McGrath, Mobile Money for the Unbanked 101, GSMA, produced as PAYPAL-FINTIV000004507
1027	File History for U.S. Provisional Patent Application No. 61/522,099
1028	Fintiv's March 8, 2023 Response and Objections to Defendants' Interrogatory No. 8
1029	*Fintiv, Inc., v. Apple Inc.*, Case No. 1:21-cv-00896-ADA, Dkt. 441 (W.D. Tex., July 5, 2022)
1030	PAYPAL-FINTIV000004485: "What is a Money Order?", Investopedia.com, 2021, available at https://investopedia.com/terms/m/money-order.asp
1031	PAYPAL-FINTIV000004691: "Who are the Unbanked and Underbanked?", taxoutreach.org, available at https://www.taxoutreach.org/outreach-strategies/asset-development-and-outreach/unbanked/

I. Introduction And Qualifications

1. My name is Sandeep Chatterjee. I have been engaged by Petitioners PayPal Holdings, Inc. and PayPal, Inc. to analyze and offer my opinion regarding the validity of Claims 1-3 and 5-7 of U.S. Patent No. 8,538,845 ("the '845 Patent").

2. For purposes of this declaration, I will provide my detailed analysis and opinions regarding validity below.

3. I provide a summary of some of my relevant educational background, work experience, and other relevant qualifications. A more detailed recitation of my professional qualifications and background is reflected in my Curriculum Vitae ("CV"), attached to the Petition as Exhibit 1004.

4. 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.

5. 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.

6. 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.

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.

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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, including systems for banking transactions. 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

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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. The initial system was directed to certain unbanked populations.

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 forty expert declarations and expert reports, testified at deposition more than seventy times, and testified at trial or at hearings at least nine times. Recently, I have been identified as one of the top 1000 patent professionals in the world, and I am listed in the 2022 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.

II. Understanding of the Governing Law

A. Legal Standard for Prior Art

15. I understand that a patent or other publication must first qualify as prior art before it can be used to invalidate a patent claim.

16. I have been informed by counsel that the applicable law in this case for prior art is 35 U.S.C. § 102 as written before the America Invents Act.

17. [intentionally left blank]

18. I have been informed that the patent owner Finitv Inc. ("Fintiv") contends that the '845 patent claims priority to June 3, 2011.

19. I understand that the "priority date" of a patent is the date on which it is filed, or the date on which an earlier-filed patent application is filed if the patentee claims it is entitled to the benefit of priority to that earlier-filed patent application. I have been instructed by counsel to assume that the '845 patent priority date is June 3, 2011 and I used that date in forming my opinions.

20. I further understand that the priority date is significant because patents, systems, or documents that are public prior to the priority date may invalidate the claims.

21. I understand that a U.S. patent may qualify as prior art to an asserted patent if the date of publication or issuance is prior to the invention in the asserted patent. I further understand that a printed publication, such as a book or an article published in a magazine or trade publication, may qualify as prior art to an asserted patent if the date of publication is prior to the invention of the asserted patent. A paper or presentation may also qualify as prior art if presented at a publicly available seminar, conference, or trade show prior to the invention in the asserted patent.

22. I understand that a U.S. patent or published patent application may qualify as prior art to the asserted patent if the application for that U.S. patent or

published patent application was filed in the United States before the invention of the asserted patent.

23. I understand that to qualify as prior art, a reference must contain an enabling disclosure that allows one of ordinary skill to practice the claims without undue experimentation.

24. I understand that documents and materials that qualify as prior art can be used to invalidate a patent claim as anticipated or as obvious.

B. Invalidity by Anticipation

25. I understand that once the claims of a patent have been properly construed, determining anticipation of a patent claim requires a comparison of the properly construed claim language to the prior art on a limitation-by-limitation basis.

26. I understand that a prior art reference "anticipates" an asserted claim, and thus renders the claim invalid, if all elements of the claim are disclosed in that prior art reference, either explicitly or inherently (i.e., necessarily present or implied).

C. Invalidity by Obviousness

27. I have been instructed by counsel on the law regarding obviousness, and understand that even if a patent is not anticipated, it is still invalid under 35 U.S.C. § 103, as written before the America Invents Act, if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole

would have been obvious at the time the invention was made to a person of ordinary skill in the pertinent art.

28. I understand that a person of ordinary skill in the art provides a reference point from which the prior art and claimed invention should be viewed. This reference point prevents a person of ordinary skill from using one's insight or hindsight in deciding whether a claim is obvious.

29. I also understand that an obviousness determination includes the consideration of various factors such as (1) the scope and content of the prior art, (2) the differences between the prior art and the challenged claims, (3) the level of ordinary skill in the pertinent art, and (4) the existence of secondary considerations such as commercial success, long-felt but unresolved needs, failure of others, etc.

30. I have been informed that secondary considerations of non-obviousness may include (1) a long-felt but unmet need in the prior art that was satisfied by the invention of the patent, (2) commercial success or lack of commercial success of processes covered by the patent, (3) unexpected results achieved by the invention, (4) praise of the invention by others skilled in the art, (5) taking of licenses under the patent by others, and (6) deliberate copying of the invention. I also understand that there must be a relationship or "nexus" between any such secondary indicia and the claimed invention. I further understand that contemporaneous and independent

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invention by others is a secondary consideration supporting an obviousness determination.

31. I understand that an obviousness evaluation can be based on a combination of multiple prior art references. I understand that the prior art references themselves may provide a suggestion, motivation, or reason to combine, but other times the link between two or more prior art references is simple common sense. I further understand that obviousness analysis recognizes that market demand, rather than scientific literature, can drive innovation, and that a motivation to combine references may be supplied by the direction of the marketplace.

32. I understand that if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

33. I also understand that practical and common-sense considerations should guide a proper obviousness analysis, because familiar items may have obvious uses beyond their primary purposes. I further understand that a person of ordinary skill in the art looking to overcome a problem will often be able to fit the teachings of multiple publications together like pieces of a puzzle, although the prior art need not be like two puzzle pieces that must fit perfectly together. I understand

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that obviousness analysis therefore considers the inferences and creative steps that a person of ordinary skill in the art would employ under the circumstances.

34. I understand that a particular combination may be proven obvious by showing that it was obvious to try the combination. For example, when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp because the result is likely the product not of innovation but of ordinary skill and common sense.

35. I understand that the combination of familiar elements according to known methods may be proven obvious when it does no more than yield predictable results. When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, obviousness likely bars its patentability.

36. It is further my understanding that a proper obviousness analysis focuses on what was known or obvious to a person of ordinary skill in the art, not just the patentee. Accordingly, I understand that any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed. Additionally, a reference

outside of the field of endeavor may still be prior art if the reference is reasonably pertinent to the particular problem being solved by the patentee.

37. I understand that a claim can be obvious in light of a single reference, without the need to combine references, if the elements of the claim that are not found explicitly or inherently in the reference can be supplied by the common sense and background knowledge of one of skill in the art.

38. I understand that a person of ordinary skill could have combined two pieces of prior art or substituted one prior art element for another if the substitution can be made with predictable results, even if the swapped-in element is different from the swapped-out element. In other words, the prior art need not be like two puzzle pieces that must fit together perfectly. The relevant question is whether there exists a reasonable expectation of success, such that a person of skill would view them as a design choice. The person of ordinary skill would use ordinary creativity and is not limited like an automaton.

39. In sum, my understanding is that prior art teachings are properly combined where a person of ordinary skill in the art, having the understanding and knowledge reflected in the prior art and motivated by the general problem facing the inventor, would have been led to make the combination of elements recited in the claims. Under this analysis, the prior art references themselves, or any need or problem known in the field of endeavor at the time of the invention, can provide a

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reason for combining the elements of multiple prior art references in the claimed manner.

40. I have been informed and understand that the obviousness analysis requires a comparison of the properly construed claim language to the prior art on a limitation-by-limitation basis.

41. I have written this report with the understanding that in an *inter partes* review, obviousness must be shown by a preponderance of the evidence.

D. Interpreting Claims Before the Patent Office

42. I understand that IPR is a proceeding before the United States Patent & Trademark Office ("USPTO") for evaluating the validity of issued patent claims. I understand that, in an IPR, a claim term is interpreted in a manner consistent with the standard used in patent litigation. That standard generally construes the claims according to their "ordinary and customary" meaning in view of the claim language, specification, and file history, and where applicable, relevant other evidence. I understand that the P.T.A.B. has held the Petitioner is not prohibited from submitting a claim construction it believes is incorrect and relying on that construction to show how the claim is unpatentable.

43. I understand that a patent's "specification" includes all the figures, discussion, and claims within the patent. I understand that the USPTO will look to the specification and prosecution history to see if there is a definition for a given

claim term, and if not, will apply the ordinary and customary meaning from the perspective of a person of ordinary skill in the art ("POSA") at the time in which the alleged invention was made.

E. Materials Relied on in Forming My Opinions

44. In forming my opinions expressed in this declaration, I have relied on my own knowledge, experience, and expertise, as well as the background knowledge of a POSA in the relevant timeframe.

45. In addition, I have reviewed the Challenged Patent (Ex-1001), its prosecution history (Ex-1002), and the following references:

Ex-No.	Brief Description
1005	US Publication No. 2007/0255620 ("Tumminaro")
1006	US Publication No. 2006/0253335 ("Keena")
1007	U.S. Publication No. 2011/0137789 ("Kortina")
1008	US Publication No. 2008/0270246 ("Chen")

46. I have also reviewed Fintiv's Infringement Chart (Ex-1011), the District Court's Claim Constructions (Ex-1012), various websites related to mobile payment systems pertinent to the priority of the '845 patent, articles, and other extrinsic evidence cited herein.

F. Level of Ordinary Skill in the Art

47. My opinions are provided based on what a person of ordinary skill in the art in the technical field of the purported invention would have understood at the

time of the purported invention of the Challenged Patent. Around 2011, a POSA in the '845 patent's field would have a working knowledge of mobile payment systems, including of software development for mobile payment systems. Such a POSA would have had a bachelor's degree in electrical engineering, computer science, or equivalent training, and approximately two years of work experience in software development in the field of mobile payment systems. Lack of work experience can be remedied by additional education, and vice versa. The basis for my familiarity with the level of ordinary skill is my interaction with large numbers of workers in the field of mobile payment systems who were at this level of skill. As shown by my experience listed above and my CV (Ex. 1004), I was qualified as a POSA at the relevant time.

48. In reaching this opinion as to the hypothetical person of ordinary skill in the art, I have considered the types of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level and professional capabilities of workers in the field.

49. I have been informed and understand that the content of a patent and prior art should be interpreted the way a person of ordinary skill in the art would have interpreted those references at the time of the invention of the patent. I

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understand that the person of ordinary skill is a hypothetical concept referring to one who thinks along the lines of conventional wisdom at the time.

50. My opinions expressed here are from the viewpoint of such a POSA as of June 3, 2011.

G. Identification of Challenge

51. Claims 1-3, and 5-7 are unpatentable on the following grounds:

Ground	Claims	Basis for Unpatentability
1	5, 7	Anticipation under 35 U.S.C. § 102 by Tumminaro
2	5-7	Obviousness under 35 U.S.C. § 103 over Tumminaro and Background Knowledge of POSA
3	1-3	Obviousness under 35 U.S.C. § 103 over Tumminaro, Keena, and Background Knowledge of POSA

III. BACKGROUND OF THE TECHNOLOGY

A. Background and Prevailing Industry Trends Before the '845 patent

1. Mobile Wallets Were Well-Known to Send and Receive Money

52. By June 2011, the use of mobile wallets, including methods for transferring electronic funds and loading funds onto accounts from agent branches, were well-known and ubiquitous. For example, the GSMA Annual Report 2010: "Mobile Money for the Unbanked" (Ex. 1021) "reports 147 mobile money initiatives

in developing markets, 60 of which have already launched." PAYPAL-FINTIV00004569. The report summarized several case studies of mobile wallets: "Zain Zap," the "M-PESA" system, and "SMART Money" and "G-Cash" in the Phillipines. *Id*. at 4572.

53. Other papers provide an overview of the M-PESA system, such as the 2009 MIT Sloan article, "The Economics of M-PESA"(Ex. 1022). The paper states, "in March 2007, the leading cell phone company in Kenya, Safaricom, formalized this procedure with the launch of M-PESA, an SMS-based money transfer system that allows individual to deposit, send, and withdraw funds using their cell phone." Ex. 1022 at p. 2. The article continues "Safaricom accepts deposits of cash from customers with a Safaricom cell phone SIM card and who have registered as M-PESA users… Formally in exchange for cash deposits, Safaricom issues a commodity known as "e-float," measured in the same units as money, which is held under the user's name." *Id* at 6. Various transactions can be performed with the M-PESA system. "E-float can be transferred from one customer's M-PESA account to another using SMS technology, or sold back to Safaricom in exchange for money… while remittances are still an important use of M-PESA, e-float transfers are often used to pay directly for goods and services, from electricity bills to taxi-cab fares." *Id*. at 7.

54. "To facilitate purchases and sales of e-float, M-PESA maintains and operates an extensive network of over 12,000 agents across Kenya… Registered M-PESA users can make deposits and withdrawals of cash (i.e. make purchases and sales of e-float) with the agents, who receive a commission on a sliding scale for both deposits and withdrawals." *Id.* at 8. M-PESA was a phenomenal success, with MIT Sloan "estimating that M-PESA has reached nearly 40 percent of the adult population after a little more than 2 years of operation." *Id.* at 19.

55. While the early adoption of mobile wallets largely took place in the developing world, several mobile wallets were available in the United States as well prior to the earliest claimed priority date of the '845 patent. In January 2010, Prior published a working paper disclosing unbanked subscribers using mobile wallets:

> AMP'd Mobile, a youth-oriented MVNO with a focus on multimedia content, has announced a partnership with mobile payments company Obopay. Virgin Mobile, another youth-focused carrier, will launch a prepaid Visa debit 'Stash' card with prepaid provider NetSpend. **The product's mobile-based features include P2P transfers and text-based account alerts. Movida, a MVNO targeting the Hispanic market, has plans to offer a mobile-linked prepaid debit card that will facilitate top-ups and provide an opportunity to develop credit for the unbanked population**. Movida's m-payments solution will also integrate the prepaid debit card and phone to provide wireless remittance services, in addition to wireless transaction and balance alerts.

56. Ex-1020 at 14. As another example, PayPal released its own mobile application in 2008, which allowed users to transmit funds between each other (peer-

to-peer). *See, e.g.*, Ex. 1023. Additionally, Venmo (which PayPal later acquired in 2013) provided a widely used mobile wallet application that permitted users to send payments to "friends through text messages and mobile apps." Ex-1013. Venmo's application was widely in use before the priority date of the '845 patent, and permitted users with credit cards or bank accounts to send and receive money. *Id*.

2. Velocity and Limit Checks Were Well-Known

57. In December 2009, Venmo's founder, Andrew Kortina, filed a patent application related to Venmo's payment system, which published as U.S. Publication No. 2011/0137789. *See* Ex-1007. Kortina describes Venmo as a "trust based transaction system," which permits peer-to-peer transactions initiated via SMS messages. The system maintains "user profiles" for each individual that stores information allowing the system to evaluate the trustworthiness of each individual. As part of this assessment, Kortina describes performing a velocity check — the profile can store information pertaining to "a number of transactions and aggregate dollar amount," "represented over time," that a user has performed, and such information can be utilized to determine "a confidence level" of a particular transaction. Ex-1007, [0090] and [0012]-[0014].

58. As another example, U.S. Publication No. 2008/0270246 ("Chen"), which published in October 2008, three years before the priority date of the '845

patent, teaches performing various checks including a funds availability check and velocity check.

> The system also validates and checks other information as indicated at 222, including but not limited to account validations, address verification, routing validations, financial institution (FI) validations, card validations, external fraud check, PIN validations, funds availability, velocity check, money transfer partner (MTP) validations, card verification code/card verification value (CVC/CVV) check and merchant limitations. An authorization response is then generated at 224 and transmitted as a normalized message 201 back to the terminals 112, 114 and the subsystem message handler 182.

Ex-1008, [0086]. These checks were performed for all transactions, including "Funding." *See* Figs. 11-12, [0022].

3. Unbanked Subscribers Using Apps and Mobile Payments Systems were Well-Known

59. Mobile wallets were initially designed to serve the "unbanked" population. Unbanked subscribers are those that cannot get accounts at traditional financial institutions, and typically rely on cash to perform transactions. Ex. 1024 at p. 3 ("This is corroborated by literature reviews that show that most unbanked have consequently no formal earnings, rely on farm income, or live on 'welfare' from friends and family. Moreover, irregular income, earnings too small or earnings too small to save are also reasons **for not having a bank account**.") (internal citations omitted); Ex. 1025 at PAYPAL-FINTIV00004438 ("Unbanked: Customers, usually poor, who do not have bank accounts or transaction accounts at

formal financial institutions."); Ex. 1026 at PAYPAL-FINTIV00004511 ("Mobile Money for the Unbanked uses existing and ubiquitous mobile phone networks to deliver financial services to those peoples without access to financial services via traditional banks or financial institutions"). The primary benefit of mobile wallet payment systems, particularly in developing nations, is to individuals who do not have a convenient, non-cash method to transfer money; i.e., a financial institution account.

60. As discussed above, there were multiple efforts to service the underbanked and unbanked in the United States prior to the earliest claimed priority date of the '845 patent. Prior disclosed unbanked subscribers using mobile wallets:

> AMP'd Mobile, a youth-oriented MVNO with a focus on multimedia content, has announced a partnership with mobile payments company Obopay. Virgin Mobile, another youth-focused carrier, will launch a prepaid Visa debit 'Stash' card with prepaid provider NetSpend. **The product's mobile-based features include P2P transfers and text-based account alerts. Movida, a MVNO targeting the Hispanic market, has plans to offer a mobile-linked prepaid debit card that will facilitate top-ups and provide an opportunity to develop credit for the unbanked population.**

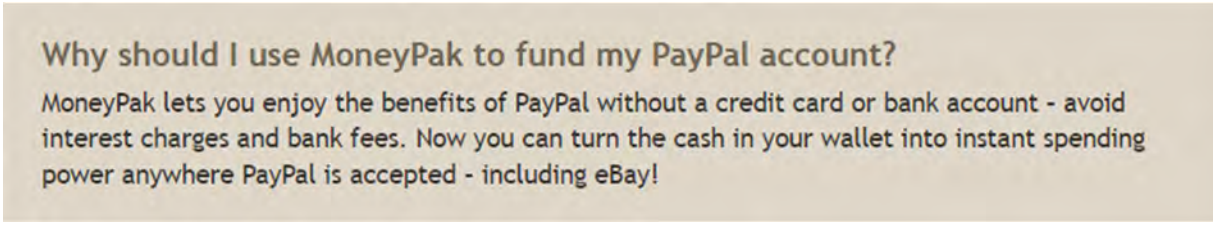
Ex-1020 at 14.

61. A significant difficulty with unbanked subscribers, who deal in cash, is getting money into and out of the system without the use of a financial institution account. PayPal permitted users to add funds from a linked bank account, debit card,

or credit card since its inception, but PayPal also provided a service for loading funds into a PayPal account (and later mobile wallet) that could be used by users without a bank account or credit card. For example, PayPal allowed an unbanked user to load funds into his or her PayPal account using a Green Dot MoneyPak prepaid card, which users could purchase, with cash, at retail locations:



Ex-1017.



Ex-1018; Ex-1015 ("By accepting MoneyPak, Chase Paymentech merchants can make their products and services available to the 80 million customers who are

unbanked or prefer to transact in cash."). As discussed above, since 2008 PayPal members could send money to other members via a mobile app. *See, e.g.,* Ex-1016.

62. As another example, Chen disclosed a payment system supporting both banked and unbanked customers using mobile wallets.

> **The payment system supports both bank customers and those customers who do not deal with banks, typically referred to in the industry as an unbank customer. The unbank customer will not have a bank account but will deal primarily in cash.** The subject invention allows the unbank customer to load his digital wallet at any member merchant with cash, a payroll check, or other forms of currency or tender, and then make transactions at any point on the system by moving funds from his digital wallet, once loaded.

Ex-1008, [0022].

63. Chen's system "can integrate with international banks, regional banks and national banks to move funds electronically between consumers and merchants, between merchants and merchants and between consumers and consumers." *Id.* Ex-1008, [0061] ("The system can accommodate any type of cash transaction. Specifically, the consumer can initiate payment to a merchant for the receipt of goods or services. The consumer can deliver cash to a merchant who then acts as an agent to accept funds on behalf of the system for loading the consumer's digital wallet, whereby the consumer can then complete other transactions.)

B. Overview of the Challenged '845 Patent

64. The '845 patent is directed to a "monetary transaction system," as also referred to as a "mobile wallet platform," "mobile wallet program," "mobile wallet transaction system," and "mobile financial services (mFS)" platform, that is capable of performing transactions between "unbanked" subscribers and other unspecified "other entities." Ex-1001 at Abstract, 6:4-7. The '845 patent states that the "monetary transaction system" can be used to perform a variety of generic transactions:

> The monetary transaction system may be used for many different tasks including enrolling a customer for a mobile wallet, adding a stored value account (either hosted by a mobile wallet platform or a third party), adding a bank or credit union account to a mobile wallet, adding a debit or credit card account to a mobile wallet, depositing funds in a mobile wallet, withdrawing funds from a mobile wallet, paying bills from a mobile wallet, topping up a prepaid mobile account through a mobile wallet, transferring funds through a mobile wallet (nationally or internationally), making in-store purchases using a mobile wallet.

Ex-1001, 3:51-62. A "monetary transaction system application" that runs on mobile devices allows subscribers to interact with the monetary transaction system. *Id.*, 12:22-40, 14:5-12.

65. The '845 patent explains that an "unbanked subscriber" is "a subscriber that does not have (or does not have access to) a bank account or credit union account." *Id.*, 12:25-29. The mFS maintains and manages the balance of mobile

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wallet accounts for each subscriber as a stored value—which the patent calls "eMoney"—as funds are transferred from one account to another. *Id.*, 7:55-60, 11:32-42. "A bank account maintained by [a] mFS program partner bank" "provide[s] funds and floats for the operation of the mFS platform." *Id.*, 11:17-19. The "partner bank" "is responsible for holding [a] mFS program master accounts that hold the funds for all mFS services and transaction." *Id.*, 11:56-59. The "partner bank may elect to maintain a separate bank account for each subscriber and/or agent branch, or a single master account may be established that contains the funds for all of the subscriber mobile wallet and agent branch accounts." *Id.*, 12:5-8.

66. With respect to accounts at a partner bank the '845 patent also describes the use of "master accounts," at the partner bank. In such an implementation, transfers of eMoney are "closed loop" in the sense that the mFS system internally manages and executes these transactions without any involvement from an external financial institution. *See* Ex-1001, 12:12-21:

> When using a master account, the bank is involved only in transactions that require the movement of funds external to the mFS program. For example, subscriber cash-in and cash-out transactions involve the addition and removal of cash from the mFS program and would consequently include a deposit or withdrawal from the master account. Retail purchases from participating mFS program retailers or the exchange of funds between mFS subscribers results in no net change in the mFS program balance and thus do not require involvement by the partner bank.

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67. Independent claims 1, 4 (unchallenged), and 5 are directed to three fundamental transactions performed by the mFS: (i) transferring money to another person (claim 5); (ii) depositing money into an account (claim 1); and (iii) withdrawing money from an account (unchallenged claim 4). The challenged independent claims require that a subscriber has a "profile" with the monetary transaction system. The specification states that the profile merely stores generic identification information[1] and the subscriber's associated financial accounts. *Id.*, 14:2-4. The monetary financial system determines whether a given payment or transfer is permissible based on "data indicated in the unbanked subscriber's profile," such as "whether the subscriber has enough eMoney in his or her stored value account, or has enough money in his or her bank account." *Id.*, 14:19-25. The mFS can send notifications and other information over generic communication "channels" including SMS, email, web, point-of-sale, and interactive voice response. *Id.*, 12:53-57, 14:36-41, and Figure 1. Further, a subscriber can be issued a "(prepaid) debit card" that's "associated with the mobile wallet application in the subscriber's

[1] The '845 patent refers to this as "know your customer" (KYC) data, but it explains that "[t]he term 'know your customer' or 'KYC' refers to information collected about an individual that identifies that individual." *Id.*, 28:54-65.

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mobile device," that the subscriber can use to, for example, withdraw funds from an ATM. *Id.*, 25:1-18; 23:7-13.

1. Disclosure relevant to Independent Claim 5

68. Figure 5A (below) depicts a "subscriber-to-subscriber" eMoney transfer. *Id.*, 17:9-10. At step 501, the subscriber "enters some type of identification information identifying subscriber B," and "an amount of money he or she wishes to transfer." *Id.*, 17:10-13. "[I]f there are sufficient funds to complete the transfer," "the monetary transaction system 210 decrements subscriber A's account and credits subscriber B's account (502)." *Id.*, 17:13-18.

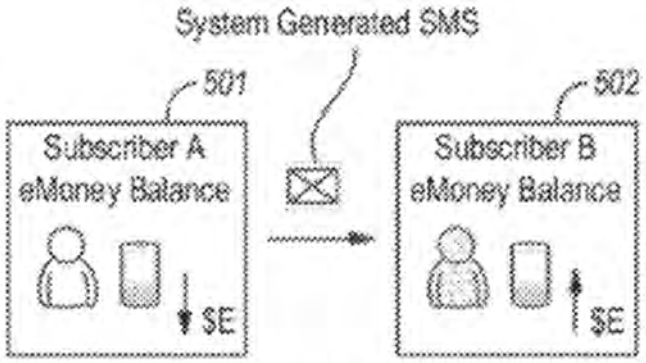


FIG. 5A

69. Upon transaction completion, "[t]he system then sends some kind of notification (*e.g.* SMS)" to subscriber B, "indicating that a certain amount of money was transferred to their account," and a notification to Subscriber A indicating that "that the transfer was successful." *Id.*, 17:15-22. While not described in connection

with performing a subscriber-to-subscriber ("peer-to-peer" or "P2P") transaction, the '845 patent states that transaction requests can indicate a "specified payment method from the unbanked subscriber's mobile wallet," that the transaction processor can validate the status of the specified payment method, and can perform a limit check (to determine whether sufficient funds are available) and/or a velocity check (to determine whether the user has exceeded a specified number of (hourly, daily, or weekly) transactions) using the specified payment method. The Specification describes "a specified payment method" at several places in connection with different transactions. For example, when describing topping up a prepaid mobile account from a mobile wallet, the Specification states:

> In one embodiment, the monetary transaction system 210 is implemented to top up a prepaid mobile account from a mobile wallet. The communication module 215 of the monetary transaction system 210 receives a subscriber communication over one of a plurality of channels 111 connected to the monetary transaction system (step 710). The subscriber communication indicates that an unbanked subscriber 205 desires to **top up a prepaid mobile account by a specified amount using a specified payment method from the unbanked subscriber's mobile wallet**. The transaction processor 216 validates the status of the selected payment method (step 720) and **performs a limit check and/or a velocity check on the selected payment method** (step 730).

Ex-1001, 18:61-19:6. When describing paying a bill from a mobile wallet, the Specification states:

> In one embodiment, the monetary transaction system 210 is implemented to pay a bill from a mobile wallet. The communications module 215 of the monetary transaction system 215 receives a subscriber communication over a communication channel 111 connected to the monetary transaction system (step 810). The subscriber communication indicates that unbanked subscriber 205 desires to **pay a bill for a specified amount using a specified payment method from the unbanked subscriber's mobile wallet (e.g. eMoney).** The monetary transaction system 210 validates the status of the selected payment method (step 820) and **performs a limit check and/or a velocity check on the selected payment method to ensure the eMoney transfer is permissible (step 830)**.

Ex-1001, 19:31-43. When describing making a purchase from a mobile wallet, the Specification states:

> In one embodiment, the monetary transaction system 210 is implemented to make a purchase from a mobile wallet. The communications module 215 of the monetary transaction system 210 receives a communication from a subscriber over a communication channels 111 (step 910). The subscriber communication indicates that an unbanked subscriber 205 desires to purchase an item for a specified amount of funds using a specified payment method from the unbanked subscriber's mobile wallet.
>
> The monetary transaction system 210 then returns a secure, perishable purchase code to the unbanked subscriber over at least one of the channels connected to the monetary transaction system (step 920) and receives a subsequent agent branch communication over a channel indicating that the purchase code has been presented to an agent (branch) (step 930). The monetary transaction system 210 validates the status of the specified payment method (step 940), **determines if the specified payment**

> **method can accommodate a purchase for the specified amount (step 950), performs a limit check and/or a velocity check on the selected payment method (960)**.

Ex-1001, 20:7-30. In describing "a limit check and/or a velocity check [performed] **on the selected payment method**," the Specification states:

> The monetary transaction system may then use rules engine 220 to perform a limit check (to determine whether sufficient funds are available) and/or a velocity check (to determine whether the user has exceeded a specified number of (hourly, daily, or weekly) transactions) on the unbanked subscriber's mobile wallet account (step 340).

Ex-1001, 15:60-65.

2. Disclosure relevant to Independent Claim 1

70. Figure 3 "illustrate[s] an unbanked subscriber making a deposit using a mobile wallet" at an "agent branch," such as "a retail store, gas station, or other location that has registered to be an agent branch." *Id.*, 15:6-23. "[A]t graphic 301," the "subscriber informs the agent manager or agent that they want to deposit a certain amount of cash." *Id.*, 15:17-23. At 302, "the agent/manager takes the cash and notifies the mobile wallet transaction system of the deposit." *Id.*, 15:23-26. At 303, "the transaction system 210 then credits the subscriber's eMoney account." *Id.*, 15:26-36.

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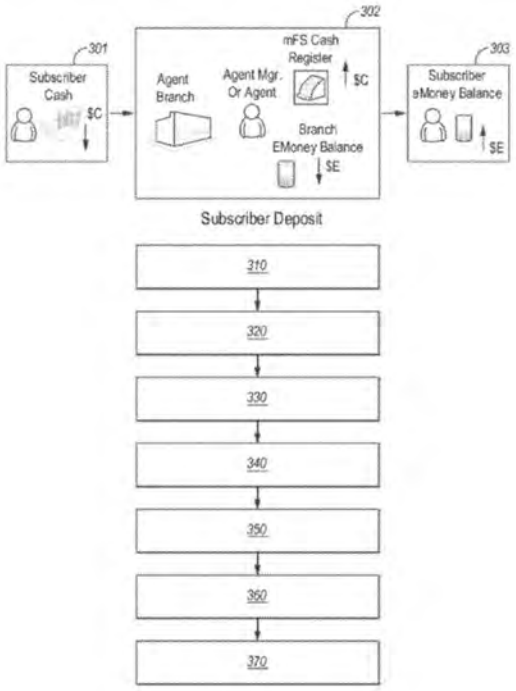


FIG. 3

71. Figure 3 of the '845 patent describes the steps that correspond to the deposit of funds required by claim 1. At step 310, the "monetary transaction system [] receives communication from an agent branch over one of the plurality of channels [] connected to the monetary transaction system" that "indicates that the unbanked subscriber 205 desires to deposit a specified amount of funds into the unbanked subscriber's mobile wallet account." *Id.*, 15:49-52. At step 320, a "transaction processor" "validates the status of [the] unbanked subscriber's mobile wallet account" and at step 330 the transaction processor "determines if the agent branch is authorized to receive deposited money." *Id.*, 15:52-59. At step 340, a "limit check" and/or a "velocity check" can be performed. *Id.*, 15:60-65. At step 350, "the

transaction system then credits the unbanked subscriber's mobile wallet account with the specified amount of funds," and at step 360, "returns a notification to the agent branch confirming the deposit." *Id.*, 15:66-16:2. Finally, at step 370, the subscriber may be notified "that the specified amount of funds was deposited in the [sic] their mobile wallet account." *Id.*, 16:2-5.

C. Assumed Effective Filing Date

72. I have been informed by counsel for this Petition that I should assume the earliest possible effective filing date for the '845 patent is June 3, 2011. I have also been informed by counsel for this Petition that I should assume the invention date for this patent is the same as its earliest effective filing date.

D. Relevant Prosecution History

73. Claims 5-7 of the '845 patent were allowed after a single non-final rejection. The '845 patent was filed on May 30, 2012 (Application No. 13/484,199 (the 199 application") with 20 claims. Ex.-1002. The examiner rejected all 20 claims in a December 26, 2012 office action. Ex-1002 at 1191-1221. The examiner did not state that any dependent claim would be allowable if incorporated into an independent claim. *Id.*

74. The applicant on April 26, 2013 re-wrote dependent claim 7 (directed to depositing funds at an agent branch) into independent claim 1, re-wrote dependent claim 8 (directed to withdrawing funds at an agent branch) into independent claim

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15, and added new independent claim 21, which was simply originally filed dependent claim 9 (directed to transferring funds to another subscriber's mobile wallet) in independent form. *See* applicant's claim amendments, Ex-1002 at 1171-1176 and originally-filed claims, *id*., 1191-1221.

75. The applicant amended claims 1 and 15 to include the limitation "performing one or more of a limit check and a velocity check on the unbanked subscriber's mobile wallet account, the limit check determining whether sufficient funds are available to make the deposit amount, the velocity check determining whether the unbanked subscriber has exceeded a specified number of transactions within a specified time period." *Id*. at 1171, 1173; *see also id*. at 1179-1180. The applicant argued that the cited prior art references failed to disclose these additional imitations. Notably, the applicant did not address the patentability of claim 21 in its April 26, 2013 Office Action Response.

76. On May 30, 2013, the applicant and examiner discussed "***necessary amendment to move the case to allowance***" during a telephonic interview, in which the examiner "suggested some ***necessary change to claim 1***."

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Date of Interview: *30 May 2013*.

Type: ☒ Telephonic ☐ Video Conference
☐ Personal [copy given to: ☐ applicant ☐ applicant's representative]

Exhibit shown or demonstration conducted: ☐ Yes ☒ No.
If Yes, brief description: _____

Issues Discussed ☐101 ☐112 ☐102 ☐103 ☒Others
(For each of the checked box(es) above, please describe below the issue and detailed description of the discussion)

Claim(s) discussed: *1*.

Identification of prior art discussed: *n/a*.

Substance of Interview
(For each issue discussed, provide a detailed description and indicate if agreement was reached. Some topics may include: identification or clarification of a reference or a portion thereof, claim interpretation, proposed amendments, arguments of any applied references etc...)

Applicant and examiner discussed necessary amendment to move the case to allowance. Examiner recommended some necessary change to claim 1 and applicant agreed. Examiner will enter the change by examiner's amendment and move the case to allowance

Ex-1002 at 52.

77. On June 7, 2013, the examiner amended ***only claim 1*** to add the limitation "when the agent bank is authorized to receive the deposited money." Ex. 1002 at 55.

validating the status of the unbanked subscriber's mobile wallet account; determining if the agent branch is authorized to receive deposited money; performing one or more of a limit check and a velocity check on the unbanked subscriber's mobile wallet account, the limit check determining whether sufficient funds are available to make the deposit amount, the velocity check determining whether the unbanked subscriber has exceeded a specified number of transactions within a specified time period;

crediting the unbanked subscriber's mobile wallet account with the specified amount of funds ***when the agent bank is authorized to receive the deposited money***;

returning a notification to the agent branch confirming the deposit; and notifying the subscriber that the specified amount of funds was deposited in the unbanked subscriber's mobile wallet account over at least one of the plurality of channels connected to the monetary transaction system.

Id. Critically, this language was not added to claims 15 and 21 of the '199 application, but nonetheless the examiner allowed all claims, citing the language of claim 1 as the reasons for allowing independent claims 15 and 21.

> *performing one or more of a limit check and a velocity check on the unbanked subscriber's mobile wallet account, the limit check determining whether sufficient funds are available to make the deposit amount, the velocity check determining whether the unbanked subscriber has exceeded a specified number of transactions within a specified time period, crediting the unbanked subscriber's mobile wallet account with the specified amount of funds when the agent bank is authorized to receive the deposited money, returning a notification to the agent branch confirming the deposit, and notifying the subscriber that the specified amount of funds was deposited in the unbanked subscriber's mobile wallet account over at least one of the plurality of channels connected to the monetary transaction system."*
>
> For these reasons claims 1, 15, and 21 are deemed to be allowable over the prior art of record, and claims 2-3 and 22-23 are allowed by dependency on an allowed claim.

Id. at 58; *see also id.* at 56-57. Independent claims of 1, 15, and 21 of the '199 application issued as claims 1, 4, and 5, respectively, of the '845 patent.

78. It is unclear why the examiner felt the change only to claim 1 necessitated allowance of claims 4 and 5, nor why, if the step of "performing one or more of a limit check and a velocity check" was patentable, the examiner did not state dependent claims 7-9 would be allowable if rewritten independent form.

IV. Claim Construction

A. District Court Claim Construction

79. The district court construed the term "mobile wallet" to mean "[a] stored value account or prepaid access account (PPA) that allows the owner (or

'subscriber') to pay for goods and services of the mFS platform from his or her mobile wallet account." Ex-1012 at 1. The district court construed the terms "agent branch," and "unbanked subscriber" as "plain and ordinary meaning." I have been instructed by Counsel to apply the district court's constructions.

B. Claim Terms Requiring Construction

1. "unbanked subscriber"

80. As discussed above, the district court construed this term to have its plain and ordinary meaning. The specification describes an unbanked subscriber as one without access to an account at a financial institution. Ex-1001 at 1:51-53 ("The subscriber may have access to a bank account, or may be an 'unbanked user' that does not have access to a bank account."), 3:46-48 ("The subscriber may have access to a bank account, or may be an 'unbanked user' that does not have access to a bank account."), 12:25-27 ("An 'unbanked subscriber' is a subscriber that does not have (or does not have access to) a bank account or credit union account."), 13:65-67 ("The subscriber may have access to a bank account, or may be an unbanked subscriber."); Thus a POSA reading the '845 patent would understand that the plain and ordinary meaning of the term "unbanked subscriber" is a subscriber that does not have or have access to a financial institution account.

81. This construction is consistent with the extrinsic evidence, which consistently refers to the "unbanked" as individuals that cannot get accounts at

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traditional financial institutions, and typically rely on cash to perform transactions. Ex.1026 at 4511 ("Mobile Money for the Unbanked uses existing and ubiquitous mobile phone networks to deliver financial services to those peoples without access to financial services via traditional banks or financial institutions"); Ex. 1030 at 4491 ("unbanked is a term for people who do not use banks or banking institutions in any capacity."); Ex. 1031 ("People who do not use mainstream financial services, such as checking or savings accounts, and primarily conduct transaction in cash when using alternative financial services like payday lending or check cashing, are considered unbanked.")

2. "wherein performing the specified transaction includes communicating with a monetary transaction database to determine whether the transaction is permissible based on data indicated in the [unbanked] subscribers' profile"

82. Claims 1 and 5 both recite this limitation. The only examples of any determination in the specification describe limit and velocity checks:

> [P]erforming the specified transactions may include communicating with the monetary transaction database to determine whether the transaction is permissible based on data indicated in the unbanked subscriber's profile (***for instance, whether the subscriber has enough eMoney in his or her stored value account, or has enough money in his or her bank account***). Rules engine 220 may also be consulted to determine whether the subscriber has exceeded a specified number of allowed transactions. Then, if funds are available, and the transaction is otherwise permissible, the monetary transaction system can transfer money or eMoney 221…

Ex-1001 at 14:19-25. *See also id.*, 19:39-44 ("The monetary transaction system 210 … performs a limit check and/or a velocity check on the selected payment method to ensure the eMoney transfer is permissible (step 830)."

83. The rest of the specification merely repeats the claim limitation, and does not specify any criteria a transaction must meet to be "permissible," nor provide examples of any specific "data indicated in the subscribers' profile." The Abstract of the '845 patent states:

> Embodiments are directed to monetary transaction system for conducting monetary transactions between transaction system subscribers and other entities. In one scenario, the monetary transaction system includes a mobile device that runs a monetary transaction system application. The monetary transaction system also includes a subscriber that has a profile with the system. The subscriber indicates a transaction that is to be performed with the monetary transaction system. The system further includes a monetary transaction system processor that performs the transactions specified by the subscriber including **communicating with a monetary transaction database to determine whether the transaction is permissible based on data indicated in the subscriber's profile**. The monetary transaction system also includes at least one entity that is to be involved in the specified transaction, where the entity has a profile with the monetary transaction system. This entity may be a person, a retail store, an agent or other entity.

Ex-1001 at Abstract. The '845 patent again repeats the claim limitation again without providing any examples or an explanation of how this limitation can be implemented:

> Performing these transactions includes communicating with a monetary transaction database to determine whether the transaction is permissible based on data indicated in the subscriber's profile.

Ex-1001, 1:43-46.

> Performing these transactions includes communicating with a monetary transaction database to determine whether the transaction is permissible based on data indicated in the subscriber's profile.

Ex-1001, 3:38-41.

84. Based on this limited disclosure, one example that would meet the limitation "wherein performing the specified transaction includes communicating with a monetary transaction database to determine whether the transaction is permissible based on data indicated in the subscribers' profile" is "communicating with a monetary transaction database to approve or deny a transaction based on data in the subscriber's profile, including the balance of the user's account and the number of transactions performed in a given time period." Fintiv's Final Infringement Contentions also accuse the use of "sending limits" as satisfying this limitation. Ex-1011 at 37.

85. To the extent Fintiv argues the above construction is redundant of the separately-claimed limit and velocity checks in the asserted claims, I disagree. The construction above includes, but is not limited to, limit and velocity checks.

3. "validating the status of the specified recipient to ensure the specified recipient has a valid mobile wallet account" (claim 5)

86. Claim 5 includes the limitation "validating the status of the specified recipient to ensure the specified recipient has a valid mobile wallet account." Although Fintiv's FICs allege that "validating the status of the specified recipient to ensure the specified recipient has a valid mobile wallet account" is used to "determine that the mobile wallet application is a valid account ***and is associated with the correct user***" (Ex-1011 at 151), there is zero support for this additional limitation, and does not explain how one determines a specified recipient is the "correct user".

87. In connection with a *different embodiment*, i.e., an embodiment related to "add[ing] a mobile wallet platform stored value account to a mobile wallet," the '845 patent states:

> The transaction processor may perform validation checks on the unbanked subscriber to validate that the unbanked subscriber is not exceeding a specified allowable number of accounts per subscriber. The monetary transaction system 210 may then send subscriber data to another entity (such as a third party verification system) for identification of the unbanked subscriber. The monetary transaction system 210 receives results from the third party verification system indicating that the subscriber data appropriately identifies the unbanked subscriber[.]

Ex-1001, 27:35-44. The specification repeats this language at 27:55-59, 28:18-22, and 28:38-45. However, this is not relevant to the P2P transfer recited in claim 5, but rather determining whether a user has added too many accounts.

88. The specification also states, "in some cases, validating the status of the sender or the recipient includes performing a check on the specified sender or recipient to comply with the office of foreign assets control." While the specification is silent on what this compliance check entails, this is separately claimed in dependent claim 6 ("wherein validating the status of the specified recipient comprises performing a check on the specified recipient to comply with the office of foreign assets control.")

89. Finally, the specification describes adhering to KYC and AML rules in 28:54-29:7. To the extent that determining that the mobile wallet account is "associated with the correct user" is required of this limitation—with which I disagree—it should be limited to collection of a "minimum amount of information" and "validat[ing] customer identity against government blacklists." Ex-1001 at 28:54-65. The provisional application to which the '845 patent claims priority merely refers to "validat[ing] the account status" in Figure 11 for "Money Transfer" operations. Ex-1027 at 65.

90. Based on the claim language and provisional application, a POSA would have understood the term "validating the status of the specified recipient to

ensure the specified recipient has a valid mobile wallet account" to simply mean determining that the specified recipient has a mobile wallet account that is allowed to receive the transferred funds.

4. "validating the status of the unbanked subscriber's mobile wallet account" (claim 1)

91. The specification does not specify any particular validation on unbanked subscriber's mobile wallet account in connection with an unbanked subscriber depositing funds into his/her account at an agent branch. With respect to a cash-in (deposit) operation, the specification merely states "The transaction processor 2016 then validates the status of the unbanked subscriber's mobile wallet account (step 320)…" Ex-1001 at 15:55-57.

92. Fintiv's FICs allege that "validating the status of the unbanked subscriber's mobile wallet account" is used to "determine that the mobile wallet application is a valid account ***and is associated with the correct user***." Ex-1011 at 66. There is likewise no support for this additional limitation in the specification, much less an explanation of how one determines the mobile wallet is associated with the "correct user." As discussed above, connection with a *different embodiment*, i.e., an embodiment related to "add[ing] a mobile wallet platform stored value account to a mobile wallet," the '845 patent states:

> The transaction processor may perform validation checks on the unbanked subscriber to validate that the unbanked subscriber is not exceeding a specified allowable number

> of accounts per subscriber. The monetary transaction system 210 may then send subscriber data to another entity (such as a third party verification system) for identification of the unbanked subscriber. The monetary transaction system 210 receives results from the third party verification system indicating that the subscriber data appropriately identifies the unbanked subscriber[.]

Ex-1001, 27:35-44. . The specification repeats this language at 27:55-59, 28:18-22, and 28:38-45. However, this is not relevant to the deposit recited in claim 1, but rather determining whether a user has added too many accounts.

93. The specification also states, "in some cases, validating the status of the sender or the recipient includes performing a check on the specified sender or recipient to comply with the office of foreign assets control." While the specification is silent on what this compliance check entails, this is separately claimed in dependent claim 6 ("wherein validating the status of the specified recipient comprises performing a check on the specified recipient to comply with the office of foreign assets control.")

94. Finally, the specification describes adhering to KYC and AML rules in 28:54-29:7. To the extent that determining that the mobile wallet account is "associated with the correct user" is required of this limitation—with which I disagree—it should be limited to collection of a "minimum amount of information" and "validat[ing] customer identity against government blacklists." Ex-1001 at 28:54-65. The provisional applications to which the '845 patent claims priority

merely refers to "validat[ing] the account status" in Figure 7 for "Cash-In (Deposit Money)" operations, and illustrates the concept of "validat[ing] the account status" with the example of a padlock, indicating that the account is merely checked to ensure it is not "locked" or frozen. Ex-1027 at 39:

95. Based on the plain language of the claim and the provisional application, a POSA would understand the term "validating the status of the unbanked subscriber's mobile wallet account" to simply mean determining that the unbanked subscriber's mobile wallet account is allowed to receive the deposited funds.

96. [intentionally left blank]

V. Detailed Discussion of the Grounds for Unpatentability

97. The Challenged Claims are unpatentable based on three grounds. Ground 1 establishes that claims 5 and 7 are anticipated by Tumminaro. Grround 2 establishes that claims 5-7 are rendered obvious by Tumminaro and the background knowledge of POSA. Ground 3 establishes that claims 1-3 are obvious over Tumminaro, Keena, and the background knowledge of POSA.

A. Overview of the Principal Prior Art

1. Tumminaro (Ex-1005)

98. U.S. Pub. No. 2007/0255620 to Tumminaro ("Tumminaro") was filed on March 30, 2007 and published on Nov. 1, 2007, and is prior art under 35 U.S.C. § 102(b).

99. Tumminaro, originally assigned to Obopay Inc., discloses "an example of a specific implementation of a mobile payment system is provided, and this specific implementation is the Obopay system. The Obopay system is merely an example of an implementation of a mobile payment system and is discussed to describe more easily various aspects of the invention. The invention encompasses many mobile payment system implementations and is not limited to the specific implementations described." Ex-1005, [0157].

100. Tumminaro discloses "systems and techniques for effectuating financial transactions via mobile devices" through a "closed-loop financial transaction system for person-to-person and consumer to merchant transactions." Ex-1005, [0003]. Tumminaro emphasizes that there exists a "[n]eed for electronic payments to be accessible to banked and unbanked customers." *Id*., [0036]. Figure 1 (below left) shows a block diagram of the closed-loop financial transaction system of Tumminaro, and Figure 3 (below right) depicts a particular embodiment of the system, called "Obopay."

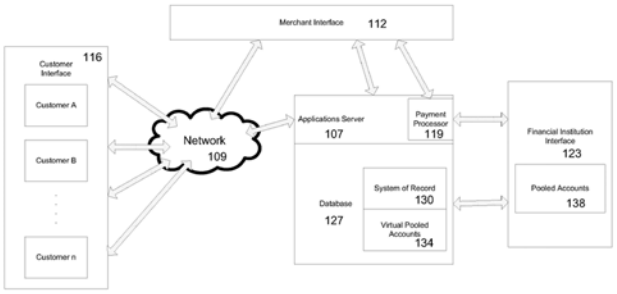


Fig. 1

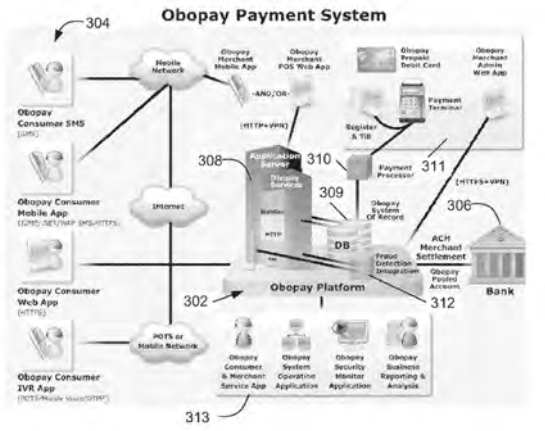


Fig. 3

300

101. The system comprises "an applications server 107… connected through network 109." Ex-1005 at [0146]. "On the applications server is a payment processor 119." *Id.* The system also includes a customer interface 116 for communicating with users through network 109, and a financial institution interface 123 that "is connected to the applications server and processor." The system permits "conducting value exchange transactions including.. mobile person-to-person payments and transactions, mobile person-to-merchant transactions, and mobile banking." *Id.*

102. Users of the Tumminaro system initiate transactions through a mobile device. Tumminaro discloses that a "mobile payment platform and service provides a fast, easy way to make payments by users of mobile devices." Ex-1005 at [0034]. Tumminaro discloses a "mobile client application, resident on the mobile device" that "simplifies access and performing financial transactions in a fast, secure manner." *Id. See also id.*, [0465] ("The MCA resides on the cell phone 3802.")

Tumminaro provides a detailed description of the mobile client application in paragraphs [0695-0906]. Specifically, the "mobile client application allows people to pay friends, shop, and transfer funds by their mobile device. An account holder can access the mobile client application to send money or request money from anyone with a mobile device that supports text messaging or mobile Internet capabilities." *Id*., [0705].

103. Users of the Tumminaro system may be "carded users" or "no-card users." Carded users are those that "sign up for with [sic] a particular banking partner to receive" a prepaid debit card or credit card. *Id*., [0278]. For no-card users, the system uses "pooled accounts." *Id*., [0023]. Pooled accounts are bank accounts for multiple users held at a partner financial institution or internally by the closed loop system itself. *Id*., [0145], [0516], [0603], Fig. 53. Tumminaro states that unbanked users may also utilize pooled accounts. *Id*., [0447]. ("for unbanked users, accounts can be created or held in a pooled account with the partner bank.")

104. Tumminaro additionally describes transfers between no-card users as "closed loop" operation, in which "the components of the value transfer process take place under the control of the entity who owns the payment system." Ex-1005, [0433]. In closed loop transactions, such as between two no-card users, the owner of the payment system, *e.g.*, Obopay, settles transactions by recording balances in its own internal ledger. *See*, *e.g.*, *id*. at [0420].

2. Keena (Ex-1006)

105. U.S. Pub. No. 2006/0253335 to Keena ("Keena") was filed as a PCT application on January 22, 2004 and published in the U.S. on November 9, 2006, and is therefore prior art under 35 U.S.C. § 102(b).

106. For making electronic payments to suppliers of goods and services, Keena identifies known methods that include "the use of scratch cards," in which "usage codes for services are provided on scratch cards which are sold for cash." Ex-1006, [0011]. "However, the cost of scratch card production, distribution and security can be prohibitive particularly as the value of the top-up itself may be relatively small in relation to these fixed costs." Ex-1006, [0011]. Accordingly, "[t]he present invention is particularly useful in emerging markets where mobile phone penetration is growing but where few alternatives exist for providing prepaid top-ups." *Id.*, [0023].

107. Keena discloses a "mobile payment platform 10" which is "a carrier-grade mobile 'wallet' platform" that "supports a range of transactions from micro-payments up to very large value purchases." Ex-1006 at [0036-37]. The platform includes a "mobile stored value module 14" in which "registered users (registered wallet holders) may prepay funds which can be later used to make payments for certain goods and services." *Id.,* [0038]. This stored value "offers an alternative payment option useful in situations where subscribers are not banked." *Id.* In

particular embodiments, the stored value is sold as "top-up tokens via a network of distributors to customers who do not have a phone or bank account and who… can only pay in cash." *Id*., [0052].

108. The "subscriber approaches the vendor with cash and requests a top-up for $50… The vendor provides the top-up using their mobile phone as the point of sale device." *Id*., [0050]. The vendor uses SMS to enter "a command using syntax that includes the transaction type (e.g. TOP), the subscriber's phone number, and the amount" and "submits the request." After confirming the transaction, the vendor "receives confirmation of the top-up," and "[t]he subscriber also receives a top-up acknowledgement via SMS." *Id. See also* Fig. 7, [0065].

3. Motivation to Combine Tumminaro and Keena

109. First, a person of ordinary skill of the art ("POSA"), as of the priority date of the '845 patent would have been motivated to incorporate Keena's top-up of customer's accounts via customer cash deposits at vendor's retail location with Tumminaro's mobile wallet system, for example, to permit subscribers who only have access to cash (i.e., the unbanked), to be able to add funds to their mobile wallets. A POSA would have readily recognized that the combined system would allow a large base of users. Additionally, Keena recognizes that its invention "is particularly useful in emerging markets where mobile phone penetration is growing but where few alternatives exist for providing prepaid top-ups," and that

"[a]lternative strategies that are becoming popular in developed economies, such as POS and ATM top-up solutions, are often not practical due to absence of infrastructure or low numbers of banked subscribers." Ex-1005, [0023]. Likewise, Tumminaro recognizes that there is a "[n]eed for electronic payments to be accessible to banked and unbanked consumers." Ex-1004, [0036]. And Tumminaro discloses merchants operating as "load agents." Ex-1005, [0174], [0196], [0604]. Modifying Tumminaro to allow topping-up customer's mobile wallet accounts via cash deposits at vendor retail locations as taught by Keena would allow more users to more conveniently make more cash deposits with greater security.

110. Second, a POSA would have been motivated to incorporate Keena's notification of a completed top-up transaction to both the customer and vendor into Tumminaro's system in order to efficiently alert the parties of the success of the requested top-up transaction. Tumminaro recognizes *the need for notifying parties*. Ex-1005, [0327] ("both parties being notified of the others 'steps' along the way"), [0150] ("The mobile payment system will … notify the parties appropriately.). Ex-1006, [0051] ("The vendor … submits the request …[for a top-up]. The vendor … receives confirmation of the top-up including the new stored value module balance of $320 (FIG. 2D). The subscriber also receives a top-up acknowledgement via SMS."). Sending notifications (including "comprehensive error messages") to both parties would provide greater transparency to subscribers and improve the customer

experience. *See*, *e.g.*, Ex-1006, [0047]. Furthermore, by sending notifications to both parties, users of the Tumminaro system would be informed of the transaction *in real-* or *near-real- time*, which facilitates *immediate transfer* of funds, as Tumminaro contemplates. *See* Ex-1005, [0036] ("Need for electronic payments to be available to everyone, any-place, any-time and **in near-real-time**."), [0603] ("The transfer is immediate[.]"). Tumminaro consistently identifies transaction delays as a disadvantage of conventional systems. *See*, *e.g.*, Ex-1005, [0339], [0370], [0375], [0482], and [0591]. It is common sense that users like to know that their deposit transaction was successful so they can perform other transactions (e.g., paying a utility bill) with confidence that their transaction will not be denied for insufficient funds. Moreover, the technology for sending notifications was well established by June of 2011 and a POSA would have every expectation of success implementing such notifications.

111. Third, a POSA would have been motivated to incorporate Keena's methodology of PIN challenge for validating merchants into Tumminaro's financial transaction system because Tumminaro recognizes *the need for uniquely identifying parties*. Ex-1006, [0051] ("The mobile top-up system then sends the vendor a PIN challenge."); Ex-1005, [0034] ("Financial transactions may be conducted on a person-to-person (P2P) or person-to-merchant (P2M) basis where each party is identified by a unique indicator such as a telephone number or bar code.").

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Consumer and merchants have accounts on the system, *see id*., [0501], and account holders set up "a unique account holder identification number (PIN) to verify all transactions." *Id*., [0201]. Such PIN verification also enhances security. Tumminaro's "payment server validates each transaction" because Tumminaro is concerned with preventing fraud and enhancing security. *Id*., [0203]; see also [0609]-[0617]. In fact, a POSA would have understood that the implementation of PIN challenge at the payment server is merely an extension of Tumminaro's three-level security blanket *See e.g.,* Ex-1005, [0619]. In particular, a POSA would understand that merchants and load agents should be authenticated from time to time to reduce the potential for fraud. As such, a POSA would have had a reasonable expectation of success in implementing a PIN challenge in Tumminaro's system for identifying the parties as part of validating a transaction. Such a modification would also enhance the security of the combination. Keena discloses a method to verify that vendors are authorized to receive funds and deposit them into the system in a top-up operation. Such a modification enhances the security of the system and reduces the possibility of fraud. For example, if no authorization were required, merchants could fraudulently load funds into the system without ever actually receiving cash.

112. Fourth, a POSA would have been motivated to incorporate Keena's top-up method into Tumminaro's system because Keena is analogous art to

Tumminaro—as both relate to a mobile payment platform using mobile wallets and mobile client applications. Ex-1006, [0012] ("a server side mobile wallet which provides secure storage of user identity and profiles and a payment mechanism for users to obtain goods and services from a point of sale device.") Keena's mobile payment platform supports multiple applications and services that customers can access using their personal mobile wallet, including payment or top-up, i.e. (value store) functionality. Keena's system includes mobile applications and provides the mobile applications with efficient access to a variety of … channels. *See also* Ex-1006, [0036], [0039], and [0055]; Ex-1005, [0038], [1134], and [0882]. A POSA would understand that both Tumminaro and Keena emphasize the widespread use of mobile devices (including among unbanked users), and strive to leverage the proliferation of software and apps and such devices to allow electronic payments. *See* Ex-1006, [0026], [0038]; Ex-1005, [0009], [0036].

113. A POSA would have found it obvious, desirable, and predictable to implement Keena's methodology of receiving vendor-submitted communication for a top-up, sending top-up confirmation messages to both vendors and subscribers, and implementing a PIN challenge for validating merchants into Tumminaro's financial transfer system. This combination would also have been within the skillset of a POSA because a POSA would have had the requisite knowledge of computer

technologies and software development techniques as it relates to mobile payment systems to implement this design choice.

B. Ground 1: Claims 5 and 7 Are Anticipated by Tumminaro

1. Claim 5

a. *[Preamble]: "A monetary transaction system for conducting monetary transactions between unbanked subscribers and other entities, the system comprising:"*

114. To the extent the Board considers the preamble a limitation, Tumminaro discloses this limitation. Tumminaro discloses a financial transactions system ("monetary transaction system") for conducting financial transactions between consumers and merchants. *See* Ex-1005 at Abstract ("In a mobile payment system, registered users or members may send payment to other member or unregistered users or nonmembers."); [0038] ("a closed-loop financial transaction system based, in part, on the use of a cell phone or a PDA to make or receive payments.")

115. Tumminaro also discloses the hardware and software environments of the system for a particular embodiment depicted in Figure 3:

> FIG. 3 shows a specific implementation of the invention. FIG. 3 shows a robust technology environment 300 in accordance with an embodiment of the present invention that comprises a mobile client server platform 302, a scalable hardware environment 304, and bank integration 306.
>
> Platform 302 is the heart of the payment system infrastructure offering security, communication, ledger,

currency, fraud and reporting, and administration. A mobile client application (MCA) runs on a J2EE payment server, the technology favored by many banks. Incoming and outgoing transaction requests are processed by HTTP or Web Services commands. Fraud detection, transactional databases, and bank integration complete the picture.

It will be appreciated that in view of the ubiquitous nature of the present invention platform 302 comprises many different implementations. For example, platform 302 may comprise a server farm with a plurality of servers coupled to a network of storage devices. In other embodiments, platform may be implemented as a plurality of data centers to provide load balancing and redundancy. Payment System Infrastructure—Hardware Environment of Platform 302

The payment system infrastructure is based on a horizontally expandable, clustered, and scalable hardware environment that provides robust failover capability. The Linux-based operating system supports thin client applications—most notably browsers such as Microsoft® Internet Explorer, Netscape, Opera, and Mozilla Firefox. The operating system also supports rich client applications. In an implementation, Java 2 Platform, Micro Edition (J2ME) and Microsoft .NET are used on the Mobile Client Platform. The architecture is easily configurable to allow for other rich client applications as necessary.

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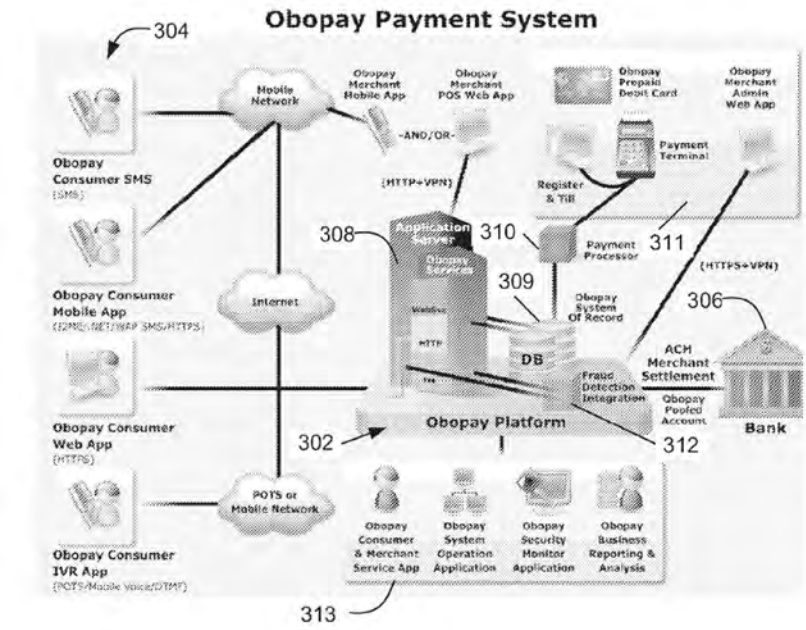


Fig. 3 300

Ex-1005, Figure 3.

116. Further, Tumminaro discloses the payment system is capable of "***conducting monetary transactions between unbanked subscribers and other entities***." Tumminaro specifically identifies the "**[n]eed for electronic payments to be accessible to banked and unbanked consumers.**" Ex-1005, [0036]. Tumminaro explains that "[t]he stand-alone closed loop payment system of the present invention is designed to integrate with a companion bank account. This account can be a preexisting account or, **for unbanked users, accounts can be created or held in a pooled account with the partner bank**." Ex-1005, [0447], emphasis added.

117. Tumminaro additionally discloses several "entities," such as "partner" and "companion" banks, "consumers," and merchants" conducting financial transactions. Ex-1005, [0455] ("In this transaction system, consumers and merchants, a group of two or more consumers or a group of two or more merchants may readily complete financial transactions quickly, securely for little or no transaction cost.") The "transaction system" in Tumminaro is may operate as a closed-loop financial transaction system, an example of which is depicted in Figure 36:

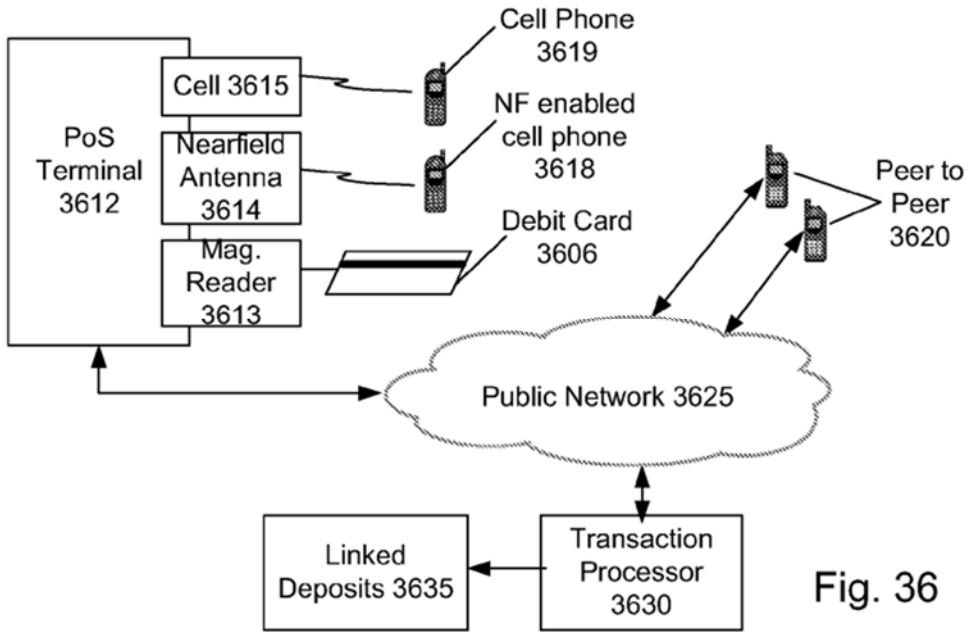


Fig. 36

Ex-1005, Figure 36.

118. Tumminaro discloses that "[i]n addition to consumer-to-merchant transactions," the invention shown exemplarily in Figure 36 "is flexible enough to implement true person-to-person" (P2P) financial transactions. Ex-1005, [0459].

"Person-to-person devices 3620 each comprise a cell phone that is linked to an account and an account holder. When one of the peers 3620 desires to initiate a transaction request, such as to send a payment to another peer, the request, authorization and confirmation of the transaction are all sent between payment server 3630 and the peers 3620 over a public network," which can be a "cellular telephone network," "a radio network," or the "public switched telephone network or PSTN." *Id.*

119. For these reasons, Tumminaro discloses the preamble.

b. *[5a]: "a mobile device configured to run a monetary transaction system application;"*

120. Tumminaro discloses a mobile device configured to run a monetary transaction system application. *See* Figure 3 ("Obopay consumer mobile app"). Figure 38 (reproduced below) depicts a cell phone 3800 ("a mobile device") configured to run a mobile client application (MCA), which is "a ***monetary transaction system application.***" The MCA includes at least the Payment API and User Interface API shown below.

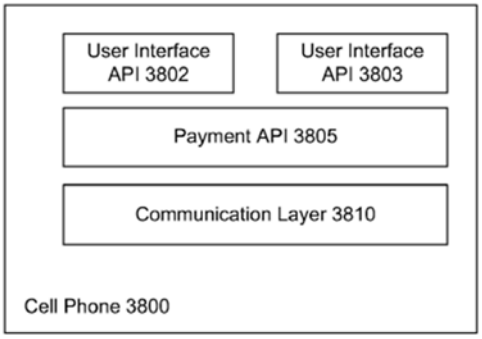


Fig. 38

Ex-1005, Figure 38. The MCA "resides on the cell phone" and "allows people to pay friends, shop, and transfer funds by their mobile device. An account holder can access the mobile client application to send money or request money from anyone with a mobile device that supports text messaging or mobile Internet capabilities." *Id.*, [0465].

121. *See also* Ex-1005, [0465] ("The MCA resides on the cell phone 3802 and comprises user interface APIs 3802 and 3803 and a Payment API 3805. API 3802 provides the user screen images that guide an account holder through various financial transactions such as identifying the other party, the amount of the transaction, if any and the type of transactions that are available. API 3803 provides service providers or other value added partners (such as accounting or record keeping services) with a mechanism for accessing the payment API 3805 to acquire information to provide the value added services.). Ex-1005, [0159] (The "mobile client application (MCA) runs on a J2EE payment server."). The MCA "interface … permit[s] a send money transaction, loading account

transaction, unload account transaction, and balance inquiry transaction.to handle requests from a mobile client application executing on mobile phone client. *Id*., [0040].

122. Tumminaro discloses that a user can "download the application by going to a specific URL using the user's mobile Internet browser (e.g., get.obopay.com) which will start the download process for the mobile application." *Id*., [0201]. "Once the mobile client application is installed, the account holder can begin using the mobile phone for concluding financial transactions." *Id*.

c. *[5b]: "a monetary transaction system subscriber that has a profile with the monetary transaction system, wherein the subscriber indicates, via the monetary transaction system application, one or more specified transactions that are to be performed using the monetary transaction system;"*

123. Tumminaro discloses a profile for each subscriber/user/member. "In the mobile payment system, each user will have a user profile that has settings for that user. These parameters may include (1) a level of participation, (2) which processor (e.g., which financial partner), (3) velocity settings, (4) linked accounts, or any combination of these." Ex-1005, [0271]. Each "user" or "member" of the Tumminaro system is a "***monetary transaction system subscriber***."

124. Tumminaro also discloses that "in each user profile, the setting for which processor will indicate which financial partner a user is associated with. When transacting business for that user, the system will then know where (which bank) to

direct transactions and which API to use so that the user's value exchange transactions (which are typically money exchanges) are transacted properly."

125. Additionally and as discussed further below, the "setting of the level of participation will be the privileges or level of service the user will have. The level of participation setting may be based on a number of factors such as what information provided when the user signed up, how much money the user has in user's account, how many referrals the user has made, how many transaction the user has made, or total dollars transacted. This profile setting may be updated periodically as new information is gathered. Some examples of names the level of participation for a user may be 'bronze,' 'gold,' 'silver,' and 'platinum' levels. The level of participation may be made visible to the user and may be used to build customer loyalty. In other embodiments of the invention, the level of participation may be hidden or otherwise not made available to the user." Ex-1005, [0272]-[0273].

126. Tumminaro further discloses that "[t]he closed loop system maintains a user profile database that includes the account holder's name and demographic data, information used for underwriting the risk for each specific account holder and linked bank account information for accounts that will be used to load or unload funds from the account." *Id.*, [0448].

127. Tumminaro also discloses ***subscribers indicating one or more specified transactions that are to be performed using the monetary transaction***

system via the MCA. "**Transactions may be requested through** any number of means including **SMS messaging**, Web, e-mail, instant messenger, **a mobile client application**, an instant messaging plug-in application or 'widget.'" *Id*., [0034]. The MCA, through its API 3802, "provides the user screen images that **guide an account holder through various financial transactions such as identifying the other party, the amount of the transaction, if any and the type of transactions that are available.**" *Id*., [0465] and Figure 38.

128. Tumminaro discloses several examples of transactions such as "P2P, POS, ATM, LOAD, BAL." *Id*., [1068]; *see also id*., [0208] ("PAY, REQUEST PAYMENT, BALANCE, TRANSFER, or HELP).

d. ***[5c]: "a monetary transaction system processor that performs the one or more transactions specified by the subscriber, wherein performing the specified transactions includes communicating with a monetary transaction database to determine whether the transaction is permissible based on data indicated in the subscriber's profile;"***

129. Tumminaro discloses "***a monetary transaction system processor that performs the one or more transactions specified by the subscriber***." Tumminaro discloses an "applications server 107" that "may be executing on a singer [sic] server machine or a number of server machines. As the load on an applications server increases, typically more machines will be used to handle an respond to the increased load." *Id.,* [0144]. Tumminaro also discloses that "on the applications server is a

payment processor" that performs the one or more transactions specified by a user. *Id.*, [0146]. Tumminaro also discloses a specific implementation of the closed-loop financial transaction system in Fig. 3 and [0158-0251]. "Platform 302 comprises a server 308 that handles interaction with account holders and maintains transaction records… Server 308 uses information (such as account numbers, balance information, etc.) obtained from transactional database 309 to manage a payment processor 310." *Id.*, [0173]. "A settlement engine handles the transactions within the closed loop system which will settle on a real time basis…. The settlement engine facilitates person-to-person (P2P) transactions". *Id.*, [0174-75]. Tumminaro also discloses a transaction processor or payment server 3630 that "includes one or more server farms or data centers capable of handling large volumes of transactions." *Id.*, [0457]. Each of these elements constitutes "a monetary transaction system processor that performs the one or more transactions specified by the subscriber."

130. As discussed above in the claim construction section, this term includes "communicating with a monetary transaction database to approve or deny a transaction based on data in the subscriber's profile, including the balance of the user's account and the number of transactions performed in a given time period." Tumminaro also discloses that performing the specified transactions includes "communicating with a monetary transaction database to determine whether the

transaction is permissible based on data indicated in the subscriber's profile" under this construction.

131. First, Tumminaro discloses that the "closed loop system maintains a user profile database that includes… information used for underwriting the risk for each specific account holder." *Id.,* [0447]. *See also* [0176] ("Platform 302 further comprises a fraud detection system 312… Risk is controlled by a general rules engine (*see* FIG. 3) that applies limits and determine [sic] the acceptability of requested transactions from a risk perspective.")

132. Tumminaro discloses a tiered fraud detection system implemented in security module 5200 in paragraphs [0594-0602]. The second tier of the fraud detection system 5200 relates to the risk for each specific account holder. *See* Fig. 52, below:

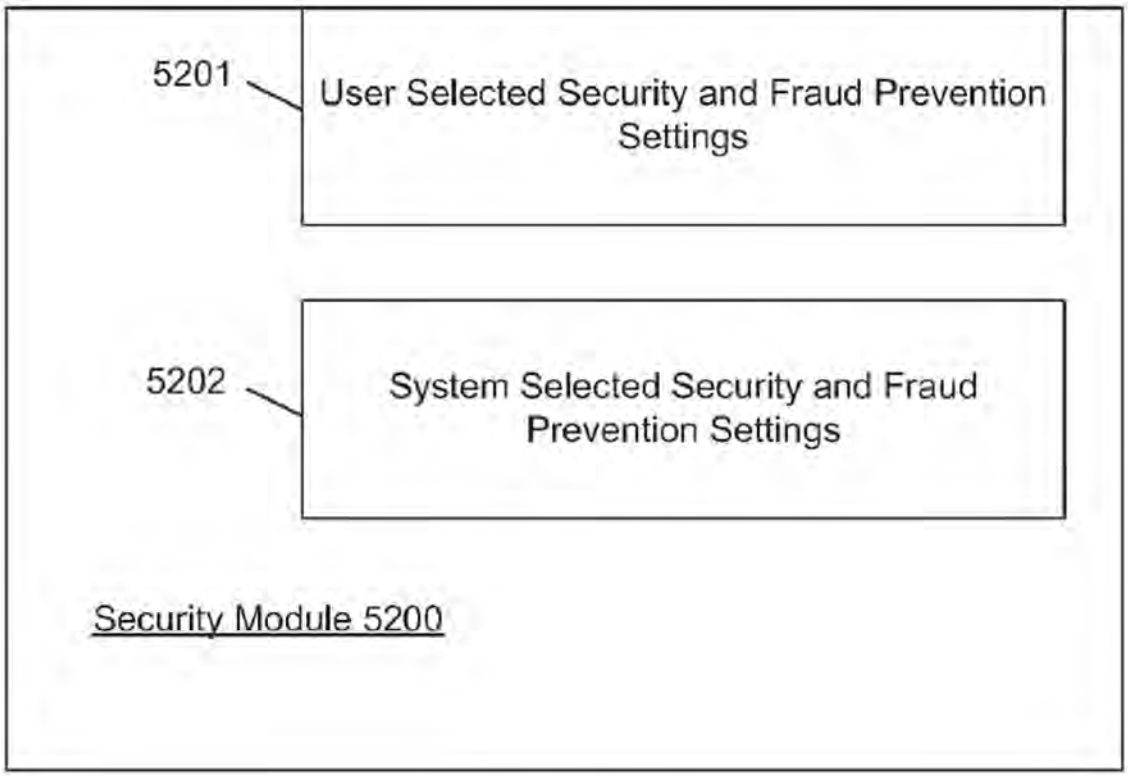


Fig. 52

133. Specifically, Tumminaro states "the second tier 5202 includes a maximum spending limit based on historical averages, geographical verification, the historical number of daily transactions… A fraud and risk rules engine (not shown) controls risks by applying spending limits and determining the acceptability of requested transactions from a risk perspective." *Id.,* [0601-02]. The information used by the fraud detection system is stored in the user's profile in the monetary the "user profile database" and historical transactions database (T-ledger) for that user. Ex-1005 at [0449] ("The payment server maintains a 'T' account record for each account holder. This account is a ledger that keeps track of each holder's

transactions and balances. In conjunction with the T account database, the payment server provides history and balance data.").

134. Additionally, the "first tier of the tiered system 5200 includes a rules based engine and user selected components 5201." The "user selected components include… the ability of the account holder to customize security for their account." *Id.,* [0594-95]. For example, "the account holder may specify maximum spending limits on a daily, weekly, or monthly basis… exclude certain merchants, account numbers or telephone numbers… designate wild card exclusions such as blocking transfer of funds to any phone having a particular area code or to any '900' or foreign number…preauthorize purchases at each of the merchants appearing on [a] white list while setting a per transaction limit on the other numbers on the white list… specify the maximum amount of reach transaction and the number of transactions that may be processed on a cell phone in a selected period." *Id.,* [0595-600].

135. With respect to the specific Obopay implementation, Tumminaro's system includes, payment processor 310, which is managed using data information from transactional database 309 ("a monetary transaction database"). Tumminaro discloses that transactional database 309 "comprises a data storage network" storing "account numbers, balance information, etc." Ex-1005, [0173]; *see also* Figure 3 (annotated in red) below showing payment processor 310 and transactional database 309 (alternatively termed as "Obopay System of Record"):

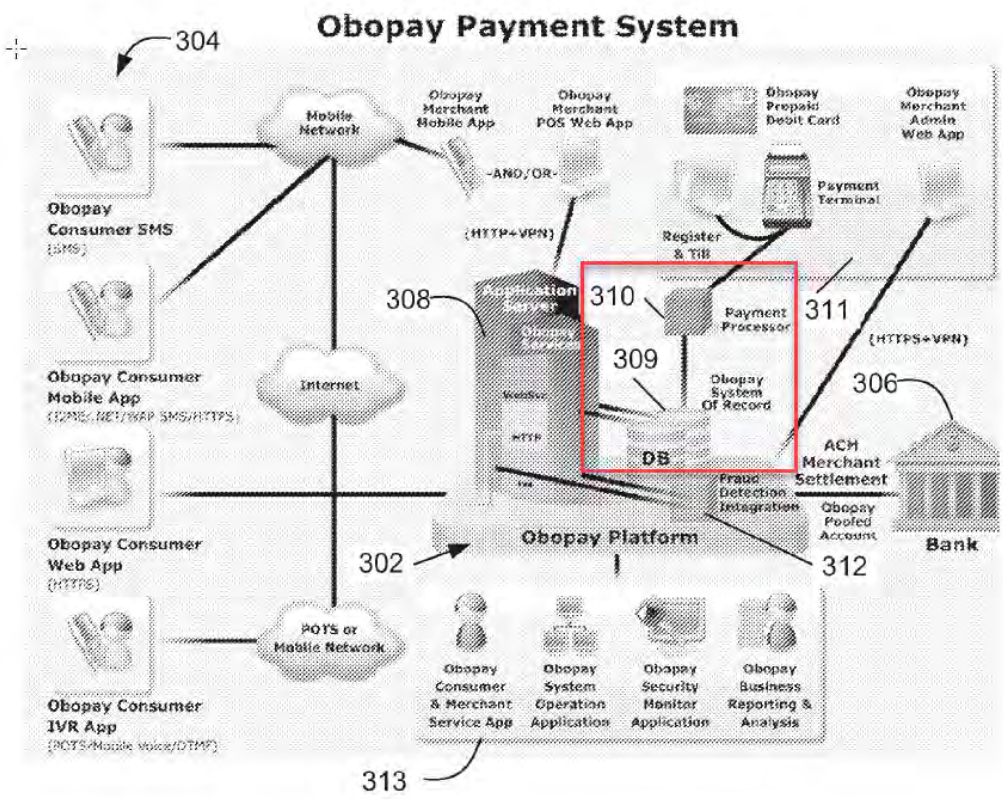


Fig. 3

Ex-1001, Figure 3 (annotated).

136. As an example of the above "user selected components" such as white and black lists, Tumminaro discloses that, in a "transaction between a no-card user (user A) and a no-card user (user B)," User B can have a "white list," that dictates "that B will accept payments from only specified users (which may be **stored in the user's profile**)," and a "black list," that "dictate[s] that B will not accept payments from specified members (**which may be stored in the user's profile**)." *Id.,* [0387] (emphasis added). Thus, when transferring from User A to User B, the system of

Tumminaro will reference whether User A is on User B's white or black list in the profile database to determine whether to permit or deny the transaction.

137. These user-specified rules must be stored in a database in a record associated with the specific user. Thus each of these rules is stored in the "user profile database" or equivalent database.

138. Second, Tumminaro discloses that the user profile includes a parameter for "level of participation," which is "the privileges or level of service that the user will have." *Id.,* [0271-273]. Tumminaro specifically describes four exemplary levels of participation, each with differing permissions for transactions. *Id.,* [0275-78]. For example, a user in the "enrolled state" may "receive and request money" but not send money, whereas a user in the "verified" state may be able to also add and withdraw money. For example, if a user attempts to send money when only in the enrolled state the system will determine such a transaction is not permissible based on information in the user's profile. This could be performed preemptively (i.e., by simply not showing that option to the user or showing the option as unselectable or "greyed out," or after the user attempts to initiate the transaction via some sort of error message). Tumminaro thus discloses determining what transactions are permissible based on "level of participation" information in the user's profile stored in a transaction database.

139. Third, Tumminaro also discloses conducting a security check based on information stored in a user's profile. The user's mobile device can have "a counter that counts in a particular sequence and generates keys in this sequence using a particular function," and that the "server or system side, the server will know the expected key ***because it is stored in the user's profile*** and will also know the function to use to generate the key." *Id.*, [0692] (emphasis added). If the expected keys and a key transmitted from the user device do not match, "[a] user account associated with the value exchange transaction may be suspended to prevent further transfers of money since a security violation has occurred." *Id.*, [0693]. This additional verification satisfies the claim limitation.

140. Fourth, Tumminaro discloses that the system may be set up to employ PIN verification. "Once registered, a [sic] account holder sets up a unique holder identification number (PIN) to verify all transactions." *Id.*, [0201]. During a transaction, for example a transfer from a no-card user to another no-card user, "[t]he mobile payment service identifies source A as member, validates account, checks balance, and ***checks PIN***,") Ex-1005 at [0201]. *See also* [0357] ("The mobile payment system may also perform a PIN and account validation or other validation steps to ensure that A's account has not been suspended, has sufficient funds, and so forth.") The PIN is stored at the system's servers. *See* [0625] ("the server then checks the PIN transmitted from mobile device against PIN recorded in system….

If and only if the PIN Matches, will the server allow the transaction to proceed. If the PIN does not match, then the transaction is disallowed. Because a PIN is uniquely assigned by a user, it is stored in, or at a minimum in association with, the user's profile—otherwise the monetary transaction system would be unable to reconcile a particular PIN with a specific user.

e. *[5d]: "at least one entity that is to be involved in the specified transaction, the at least one entity having a profile with the monetary transaction system; and"*

141. Tumminaro discloses this limitation. Tumminaro discloses "users" and/or "merchants" as entities involved in a financial transaction "on a person-to-person (P2P) or person-to-merchant (P2M) basis[.]") Ex-1005, [0034]. Additionally, as explained earlier, Tumminaro discloses user profiles. *See*, *e.g.,* Ex-1005, [0271], [0273], and [0448]. When performing a fund transfer between unbanked users, e.g., two no-card users (Figs. 13, 23, 26) or generally using stored value (Fig. 35), each of the sender and recipient has a user profile.

f. *[5e]: "wherein the monetary transaction system is implemented to transfer money between mobile wallets, including performing the following steps;"*

142. Tumminaro discloses this limitation. Tumminaro's system transfers money between mobile wallets. Tumminaro discloses mobile wallets. "The [Mobile Client Application and Platform] MCAP is basically a "mobile wallet" or "pay by phone" consumer/mobile-merchant application.". Ex-1005, [0882]. Tumminaro

discloses "mobile wallets." For example, Tumminaro expressly discloses the need for "mobile wallets" as "a cash source that is accessible from a mobile phone" and a further need for "a software application and managed service for consumer mobile payments that operates as a mobile wallet on a mobile phone platform." Ex-1005, [0020]. Indeed, Tumminaro provides several example use-cases of money transfer between mobile wallets.

> Through the mobile payment system and their phones, users will be able to do what they can with a normal wallet and much, much more. Users will be able send and receive money, pay for services, pay for bills, pay for movie tickets, pay for groceries, pay a babysitter, pay for coffee and a newspaper, instantly pay back a friend, split a dinner bill, send money to children, get money from parents, get quick or emergency cash, send emergency cash, pay up or collect on a friendly wager, pay for fantasy football, pay for gardening services, pay for association dues, track purchases, check the balance, and more.

Ex-1005, [0035].

> Some of the benefits of the invention include MPS electronic payments encourage cash to stay in the bank (instead of consumer's pockets). MPS electronic payments are safe and traceable. MPS electronic payments occur in near-real-time. MPS electronic payments are accessible to any-one, any-time and any-place. MPS can provide an optional or not required companion prepaid debit card (e.g., MasterCard, Visa, or other) for instant funds accessibility. MPS electronic payments can be leveraged for person-2-person (P2P) as well as person-2-merchant (P2M) transactions. MPS funds are stored within distributed pooled partner bank accounts. "T" records for MPS consumer funds are managed within the MPS payment system of record (for

> low cost P2P and P2M transfer). MPS facilitates manual or automated load functionality from existing financial instruments (e.g., credit, debit, other). MPS facilitates manual or automated unload functionality to existing financial instruments (e.g., credit, debit, other). MPS can optimize load or unload processing (i.e., performing load or unload within bank when possible). MPS facilitates electronic payments in a cross-bank manner. MPS facilitates electronic payments in a cross carrier or cross network manner. MPS facilitates electronic payments in a cross device or cross channel manner (i.e., mobile, e-mail, Web, instant messenger). MPS funds are electronic, PIN protected, and "live" in the bank.

Ex-1005, [0037].

143. Tumminaro also discloses that the system is implemented to execute transactions between mobile wallets. For example, Tumminaro discloses that the monetary transaction system is implemented to transfer money between two "carded users" (Ex-1005, Figs. 14, 20, [0346], [0413]), a "carded user" to a "no-card" user (*id*., Figs. 15, 22, [0347], [0415-16]); a "no-card" user to "carded user" (*id*., Figs. 16, 27, [0348], [0421]), and two "no card" users (*id*., Figs. 13, 23, 26, [0345], [0417], [0420]). Each of these transfers is a transfer between mobile wallets.

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g. ***[5f]: "receiving subscriber communication over one of a plurality of channels connected to the monetary transaction system, the subscriber communication indicating that an unbanked subscriber desires to transfer a specified amount of funds to specified recipient using a specified payment method from the subscriber's mobile wallet;"***

144. Tumminaro discloses this limitation. Tumminaro discloses that unbanked subscribers (i.e. subscribers that do not have bank accounts) can transfer funds to other subscribers. *Id.*, [0447], [0455].

145. Figure 16, shown below, illustrates steps involved with a peer-to-peer transfer of funds between a "no-card" user and a "carded user." Figure 16 includes the step of "(1) **Member A sends "pay" request to the mobile payment service server with member B as target**.." Ex-1005, [0348], Figure 16:

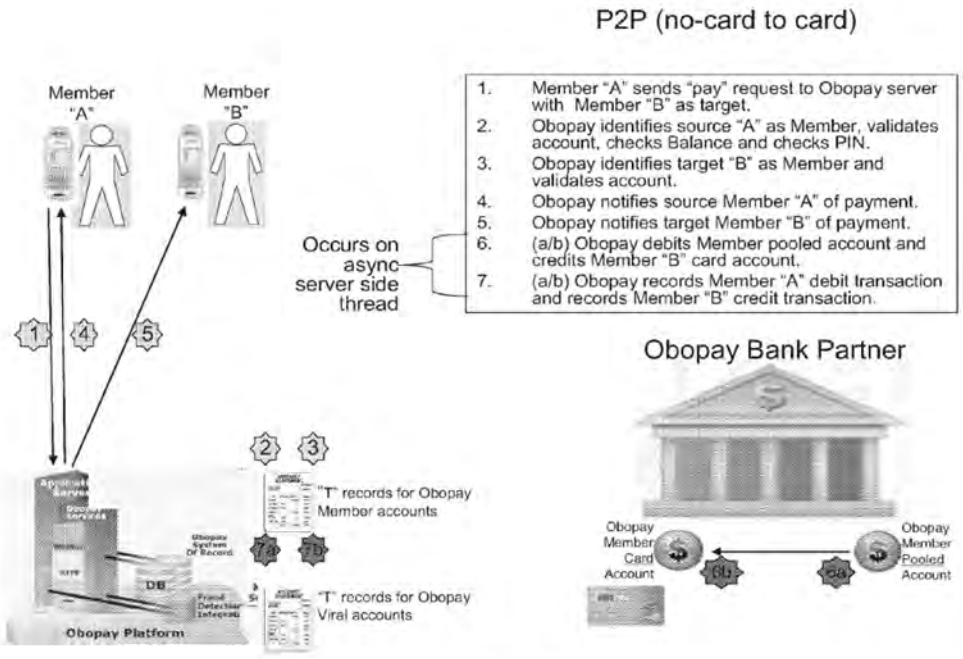


Fig. 16

Ex-1005, Figure 16. *See also* Fig. 26, [0421].

146. The same general process is described for transactions between two no-card members, card to no-card members, and for transfers using only stored value.

147. For example, Fig. 13, shown below illustrates a peer-to-peer transaction between two "no-card" individuals, where the first step involves, member "A" sending a pay request for member "B."

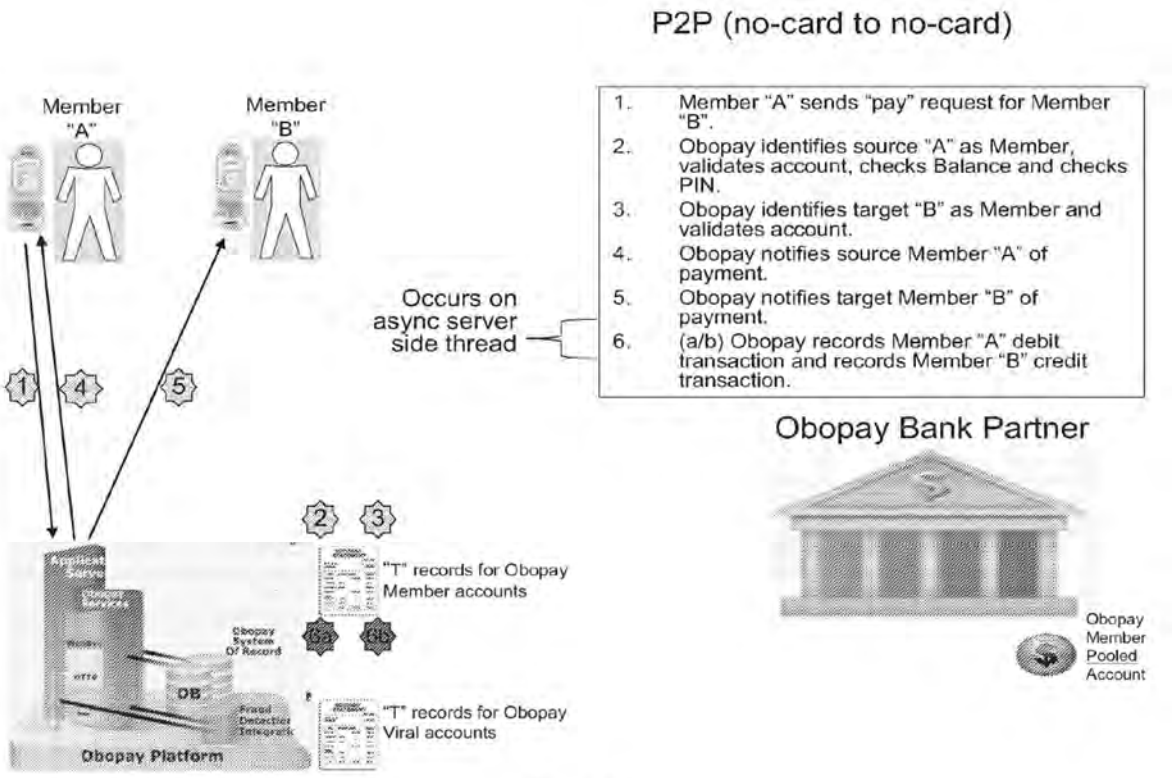


Fig. 13

148. At step 1, the Member A sends to the Obopay platform "a 'pay' request for Member 'B'." This is a subscriber communication indicating that an unbanked subscriber desires to transfer a specified amount of funds to a specified recipient.

See Ex-1001 at [0345], Fig. 23, [0417] ("(1) From the phone, O1 initiates a p2p transaction of $10 to "no-card user O2"), Fig. 26, [0420].

149. As another example, Fig. 14 depicts a transaction between two "carded users."

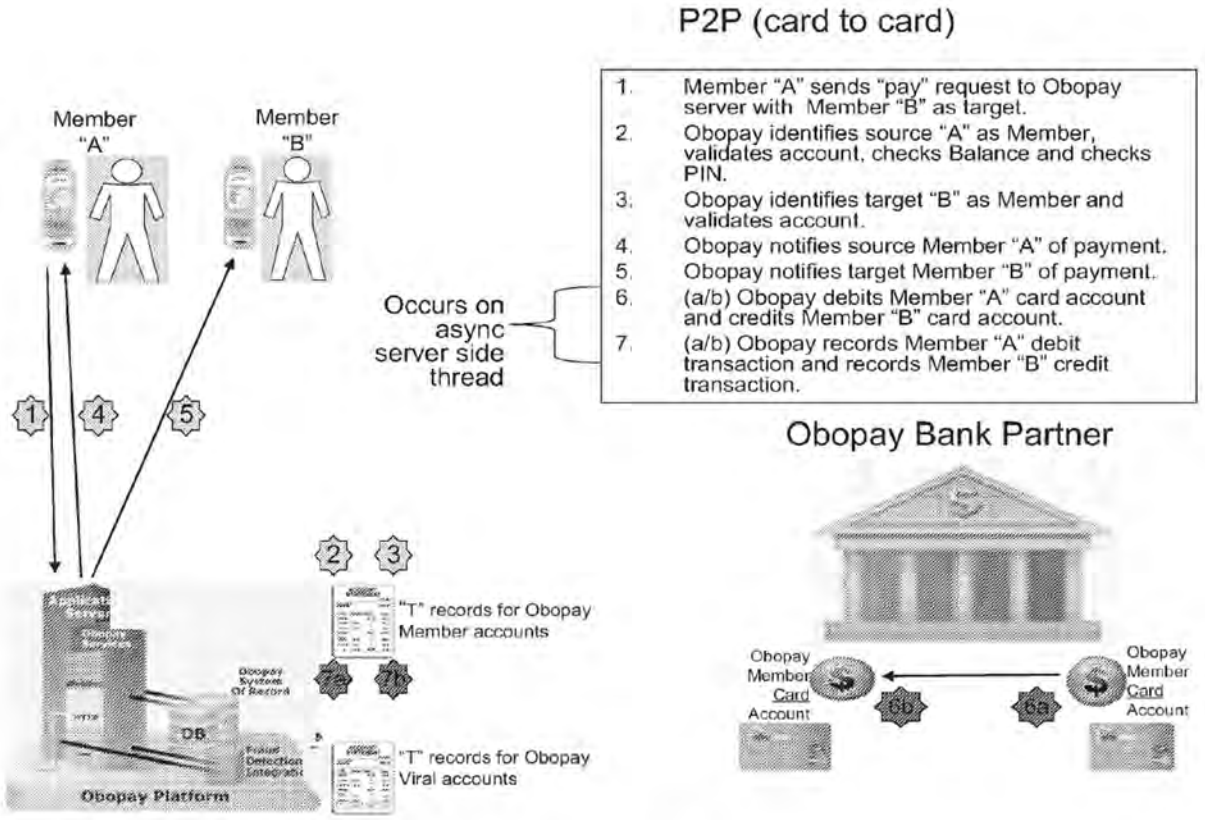


Fig. 14

150. The initial communication (1) is a "'pay' request to Obopay server with Member 'B' as target." *Id.* at Fig. 14; *see also* Fig 20, [0346], [0413] ("'Card' refers to an Obopay member who holds a Diamond Financial Products debit card. This is a 'card user' or 'carded user,' which is contrasted with a no-card user… (1) from

U1's phone, a P2P payment of $5 to U2 is initiated.") Diamond Financial Products is analogous to the "partner bank" of the '845 patent, which, like the partner of the Tumminaro system, "may elect to maintain a separate bank account for each subscriber." Ex-1001, 12:5-8.

151. As yet another example, Figure 15 depicts a transfer from a card member to a no-card member.

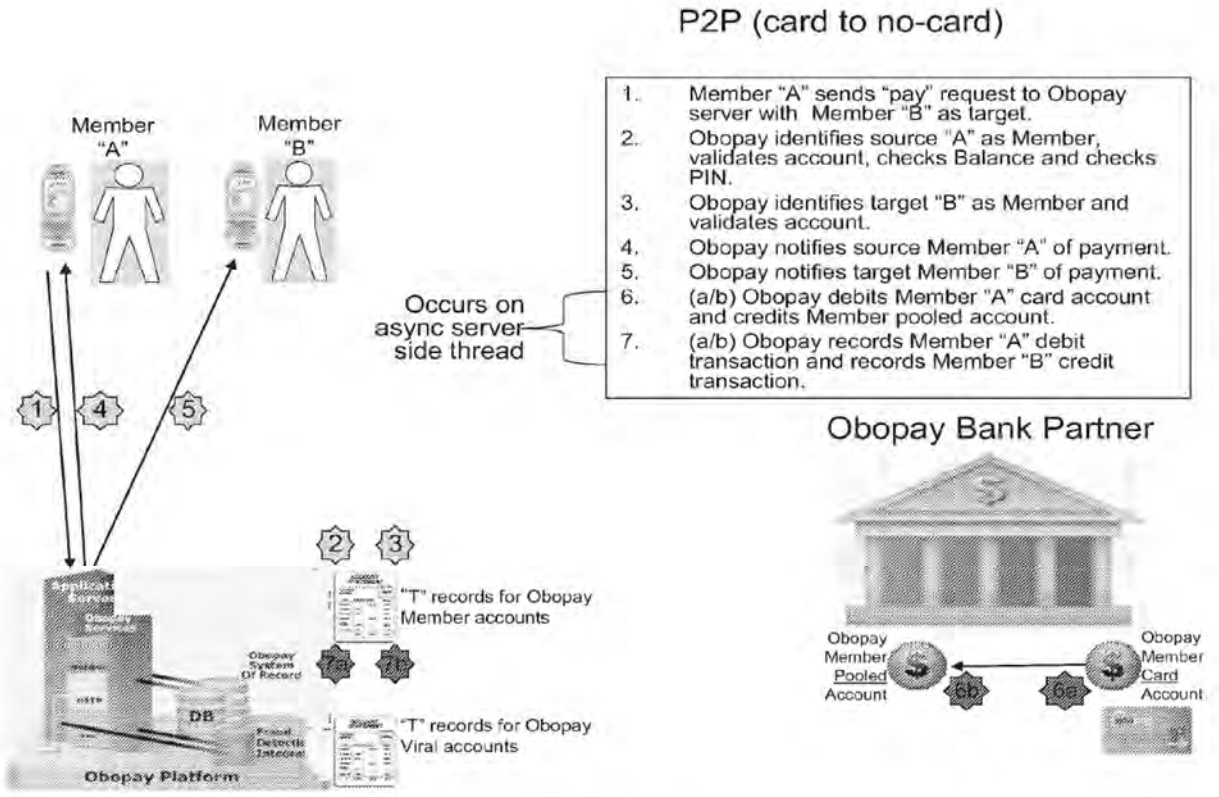


Fig. 15

152. The initial communication received by the monetary transaction system (Obopay) is a "'pay' request to Obopay server with Member 'B' as target." *Id. See also* [0347] ("Member A sends 'pay' request to the mobile payment service server

with member B as target," Fig. 22, [0415-16] ("U1 initiates a P2P transaction of $ to 'no-card' user U1").

153. Finally, Tumminaro describes the "closed loop" operation of the system wherein only stored value or pooled accounts are used, which includes the "no-card" to "no-card" transfer described in Figure 13. *See* Fig. 35:

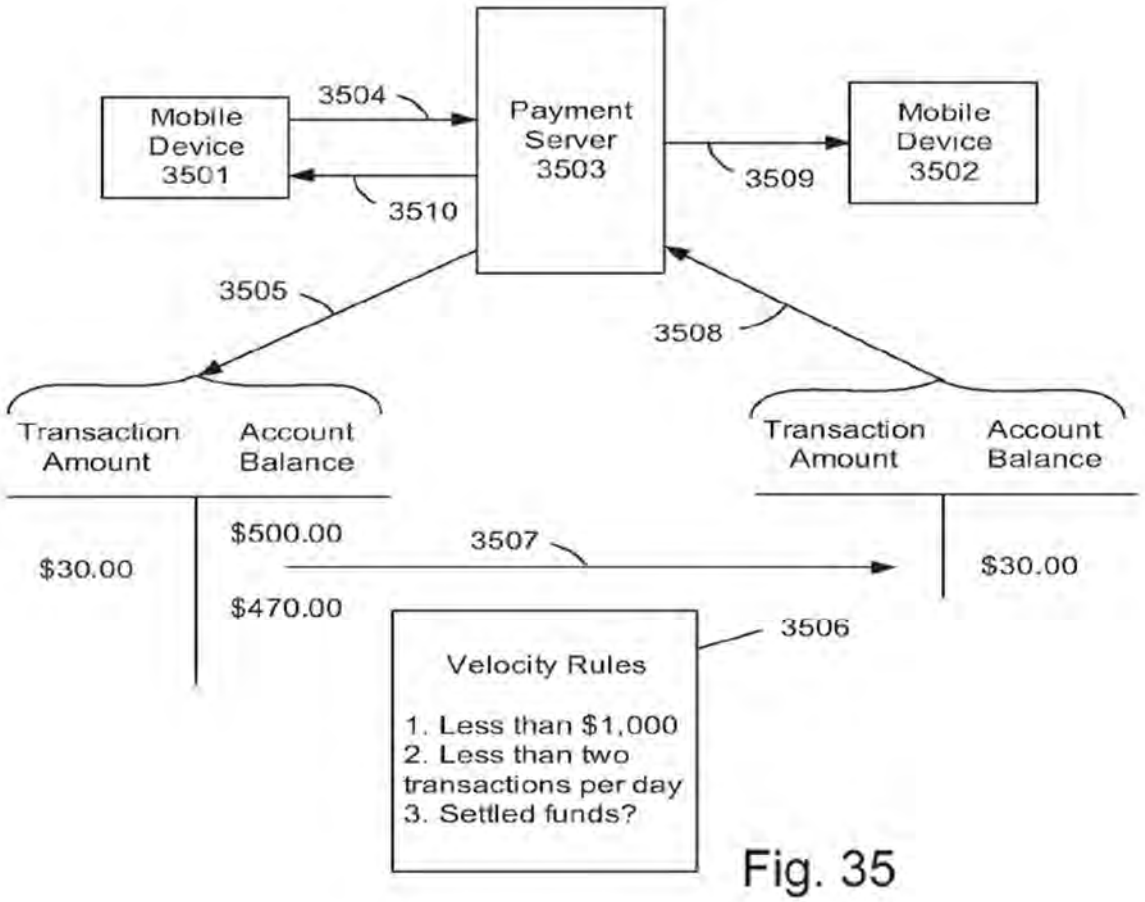


Fig. 35

154. Ex-1005 at [0434] ("when a payment is made from a mobile device 3501 to another mobile device, the request for the transfer is **passed to the payment server 3503**. The request is indicated by reference arrow 3504.")

155. Tumminaro discloses that a transaction request can be sent via SMS or through the MCA, identifying the recipient by phone number or "some other identification code" and amount to pay the recipient. EX-1005 at [0220], [0228]-[0229]. For example, Tumminaro describes that "API 3802 [included in the mobile client application] provides the user screen images that guide an account holder through various financial transactions such as **identifying the other party, the amount of the transaction**, if any and **the type of transactions** that are available." *Id*., [0465]. Tumminaro also discloses exemplary mobile application user interface screens depicting this operation. *See, e.g.* Figs. 66, 68, 82.

156. The payment request is transmitted ***"over one of a plurality of channels"*** connected to Tumminaro's mobile payment system. For example, Tumminaro describes that "[t]he system allows multichannel and cross-channel transactions. … [P]ayments may be requested from any of the available channels (e.g., mobile phone, instant messenger, e-mail, Web, debit card, WAP, SMS message, or dedicated mobile phone application)". *Id*., [0353].

157. As discussed above, Tumminaro discloses that users/members may use a pooled account or a prepaid debit card. Ex-1005 at [0447] ("for unbanked users, accounts can be created or held in a pooled account with the partner bank.") Depending on the user's account configuration, the communication to the financial transaction system indicating that the user wishes to transfer funds to a specified

recipient will include the payment method to be used (i.e., pooled account or prepaid debit card). Thus the communication is "indicating that the unbanked subscriber desires to transfer a specified amount of funds to a specified recipient ***using a specified payment method*** from the subscriber's mobile wallet." Furthermore, Tumminaro makes clear that a given mobile device may be "associated to one or more bank accounts (checking, savings, credit, prepaid, or a pooled account, and the like.") Where a given user has two or more accounts associated, for example, a pooled account and a separate prepaid account such as a gift card or prepaid debit card, the user would typically pick one of the multiple accounts to use as a funding source.

h. *[5g]: "validating the status of the selected payment method;"*

158. Tumminaro discloses this limitation, which is met by determining whether the selected payment method can be used; for example, by performing debit card verification, or determining that the stored value account balance or card account's available balance/credit is sufficient to cover the requested transaction. ***First,*** each of Figures 14 and 15 (for a carded payer) and 13 and 16 (for a no-card payer) include the step of "**(2) The mobile payment service identifies source A as member, validates account, checks balance, and checks PIN**." Ex-1005, [0347-8]. The aforementioned actions taken together serve as "***validating the status of the selected payment method***." Tumminaro's disclosure of and "checks balance"

satisfies this limitation under the construction above, which includes determining that the stored value account balance of the card account's available The prepaid debit card or pooled account (such as pooled account 405 in Figure 4) of member A qualifies as "the … payment method" which is selected (via Tumminaro's mobile client application) by member A through configuration of his or her mobile wallet account, or explicitly for a particular payment method for the transaction. *See* V.1.g.

159. ***Second***, processing debit card transactions through an external network necessarily requires "validating the status" of the selected card by the network. Tumminaro states, "[t]he card may be accepted or usable through one or more networks, including Visa, MasterCard, American Express, NYCE, PLUS, or STAR, or any combination of these." Ex-1005, [0278]. Carded users choosing to use a pre-paid debit card would have their card validated through one of these external payment networks or the issuing banks. See Ex-1005, [0412] ("Through Diamond, Obopay issues debit cards and communicates with ECL and First Premiere Bank to give Obopay users the ability to send and receive money between debit cards."), [0414] ("(2) Obopay sends the P2P request to Diamond (who in turn sends it to ECL and First Premier).") These debit card validations by debit card processors or banks also qualify as "validating the status of the selected payment method."

i. ***[5h]: "performing at least one of a limit check and a velocity check on the selected payment method, the limit check determining whether sufficient funds are available to make the deposit amount, the velocity check determining whether the unbanked subscriber has exceeded a specified number of transactions within a specified time period;"***

160. Tumminaro discloses this limitation. Ex-1005, [0348]. For example, Figure 16 includes the step of "(2) The mobile payment service identifies source A as member, validates account, checks balance, and checks PIN." Ex-1005, [0348], Figure 16. Checking the balance on person A's ("unbanked subscriber") account serves as "***performing … a limit check … on the selected payment method, … the limit check determining whether sufficient funds are available to make the deposit amount***." This same language is replicated in Figs. 13-15 and accompanying disclosures, which I will not repeat here.

161. For no-card members, Tumminaro discloses that person A's selected payment method (e.g., pooled account) is checked for sufficient balance. See Ex-1005, [0335]-[0336] ("The system identifies user A as a member, and may check the PIN number, validate the account, and check the balance for user A's account. In the event that user A's account lacks sufficient funds for the financial transaction, the system may send an electronic notification to user A for insufficient funds.").

162. For carded members, Tumminaro discloses checking the debit card balance for sufficient funds. Ex-1005, [0347] ("(2) The mobile payment service

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identifies source A as member, validates account, checks balance, and checks PIN."); *see also* Figure 15. Checking the balance on carded member A's ("unbanked subscriber") account serves as "***performing … a limit check … on the selected payment method, the limit check determining whether sufficient funds are available to make the deposit amount***." Tumminaro also discloses user-specified limits against which transactions are checked. *See, e.g.,* [0598] ("the account holder can also preauthorize purchases at each of the merchants appearing on the white list while ***setting a per transaction limit*** on the other numbers on the white list."), [0600] ("The account holder may also ***specify the maximum amount for each transaction*** and the number of transactions that may be processed on a cell phone in a selected period.") Tumminaro also discloses spending limits that are applied based on fraud checks. [0602] ("A fraud and risk rules engine (not shown) controls risks by ***applying spending limits*** and determining the acceptability of requested transactions from a risk perspective.")

163. Tumminaro also discloses "***performing … a velocity check … on the selected payment method, … the velocity check determining whether the unbanked subscriber has exceeded a specified number of transactions within a specified time period***." Tumminaro discloses a "velocity settings" parameter stored in each user's profile. Ex-1005, [0271]. "The velocity of participation is a setting that sets certain restrictions or limits on the account. Some examples on limits of an account are how

many transactions a day a user may perform or amount of money that may be transferred in a transaction." *Id*. at [0280]. For example, "after the user has remained a member for six months, the user may be automatically allowed five transactions a day when the user's previous limit for some number fewer than five."). Tumminaro also discloses user-defined velocity settings. *See, e.g.,* [0600] ("The account holder may also ***specify*** the maximum amount for each transaction and ***the number of transactions that may be processed on a cell phone in a selected period***.") Tumminaro's system thus checks each user's transactions against velocity settings in that user's profile to determine whether the unbanked subscriber has exceeded a specified number of transactions within a specified time period. See also *id.*, [0434] ("velocity rules are met as indicated at 3506" in Figure 35), Figure 35 (showing example velocity rules: "1. Less than $1,000," "2. Less than two transactions per day," "3. Settled funds?").

164. Thus Tumminaro discloses this limitation.

j. *[5i]: "validating the status of the specified recipient to ensure the specified recipient has a valid mobile wallet account;"*

165. As discussed above a POSA would have understood the term "validating the status of the specified recipient to ensure the specified recipient has a valid mobile wallet account" to simply mean determining that the specified recipient has a mobile wallet that is allowed to accept the transferred funds.

166. Tumminaro discloses this limitation under the above construction. Ex-1005, [0348]. Figures 13-16 each include the step of "**(3) The mobile payment service identifies target B as member and validates account**." Ex-1005, [0348], Figure 16. In this step, Tumminaro discloses identifying person B ("the specified recipient") as a member of the system and validating person B's account. If the recipient is not already a member of the financial transaction system, the system identifies he/she as such as sends him/her an invitation to register. *See*, *e.g.*, Ex-1005 at [0586].

167. Tumminaro also discloses different user participation states. *E.g.,* Ex-1005 at [0275]. Only in the "enrolled" state and above is the user able to accept money into his or her mobile wallet. *See, e.g., id.* at [0276] ("For the enrolled state, the user has entered basic information, such as a confirmed phone… In this state the user may receive and request money."); [0277] ("For the verified state, the user's identity is known. The user provides address or other related contact information. A user in the verified state may receive, request, add (i.e., load), or withdraw (i.e., unload) money."). Therefore, the validation step satisfies the construction of this term discussed above.

k. *[5j]: "debiting the specified payment method by the specified amount of funds;"*

168. Tumminaro discloses this limitation. Ex-1005, [0348]. Figure 16 includes the step of "(6) (a/b) The mobile payment service debits member pooled

account and credits member B card account. (7) (a/b) The mobile payment service records member A debit transaction and records member B credit transaction." Ex-1005, [0348], Figure 14 and accompanying disclosure. As discussed above, person A's "pooled account" serves as the "*specified payment method*," which is debited "by the specified amount of funds" in a funds transfer transaction.

169. Tumminaro also discloses this operation in closed loop operation (e.g. between two no-card users). *See, e.g.,* Fig. 13, step 6 a ("Obopay records Member 'A' debit transaction."); [0433] ("Server 3503 accesses the T-ledger for the account holder associated with the mobile device 3501 (as indicated by reference arrow 3505) and transfers the specified amount to a payee T-ledger (as indicated by reference arrow 3507) if certain velocity rules are met at 3506.")

l. *[5k]: "transferring the specified amount of funds to the specified recipient over at least one of the plurality of channels connected to the monetary transaction system;"*

170. Based on the language of the claims, limited discussion in the specification, and the specification, Tumminaro discloses this limitation. Ex-1005, [0348]. Figure 16 includes the step of "(6) (a/b) The mobile payment service debits member pooled account and credits member B card account. (7) (a/b) The mobile payment service records member A debit transaction and records member B credit transaction." Ex-1005, [0348], Figure 14 and accompanying disclosure.

171. Tumminaro also discloses that "[u]pon receipt of the payment request, server 403 transfers funds from the payer's account to an account for the account holder associated with mobile device 402." Ex-1005, [0253], Figure 4. As discussed above, Tumminaro's disclosure of person A sending a request to Tumminaro's mobile payment system for paying person B results in funds transferred to person B. For example, using a mobile client application on a cell phone, person A would identify the other party (person B or "the specified recipient"), indicate the type of transaction as "transfer of funds," and enter a transaction amount ("specified amount of funds"). The funds are requested over one of the plurality of channels connected to the system. Ex-1005, [0353] ("[P]ayments may be requested from any of the available channels (e.g., mobile phone, instant messenger, e-mail, Web, debit card, WAP, SMS message, or dedicated mobile phone application) and the transaction may be directed to any of the available channels, in any combination. For example, someone may request payment from instant messenger to mobile phone, from web to mobile phone, from mobile phone to instant messenger, from WAP to instant messenger, from instant messenger to e-mail, from e-mail to mobile phone, from e-mail to instant messenger, from Web to SMS, from SMS to e-mail, or any other combination. The system may also be used to pay through payment terminals, interactive web sites, pay for services or media content through television (e.g., pay for on-demand movies by a cable or satellite provider), prepaid phones, and many

others. For example, a user may pay a merchant via instant messenger. The system may support payment to or through vending machines, parking meters, kiosks, pay phones, airline ticket kiosks, and many others.").

172. Additionally, Tumminaro discloses various communications channels between the monetary transaction system (e.g. Obopay), Acquirer Partners, Bank Partners, Direct Partners, ACH Partners, and Prepaid Processing Partners. *See* Fig. 5, [0265], [0268] ("Each partner may have a different electronic interfacing scheme, and the mobile payment system will communicate using the appropriate application program interface (API) for each partner."). When executing a fund transfer, for example, between two carded users, "Obopay sends the P2P request to Diamond (who in turn sends it to ECL and first Premier)… The amount $5 is debited from U1's debit card account and credited to U2's debit card account.") These messages between the transaction system and its financial institution partners occur over communications channels as depicted in Figure 5 and effect fund transfers, thus meeting this limitation.

173. Furthermore, the funds are transferred "over one of a plurality of channels" connected to Tumminaro's mobile payment system under Fintiv's FICs. Tumminaro discloses transfers using prepaid debit card and "closed loop" operation where stored value is transferred internally in the system via entries to the "T ledger." *See*, *e.g.*, Ex-1005 at Figs. 13, 16, 23, 26, 35, [0417] ("(3) Obopay records the

increase in O2's balance and the decrease in O1's balance on the Obopay general ledger."), [0420] ("Because both O1 and O2 are existing users, their funds are stored in the Pooled Account and Bancorp Bank… Obopay's general ledger reflects the change in balance. The amount $5 is debited from O1's account and $5 is credited to O2's account."), [0449] ("The payment server maintains a 'T' account record for each account holder. This account is a ledger that keeps track of each account holder's transactions and balances." Thus under Fintiv's interpretation of this claim in its FICs, Tumminaro discloses "transferring the specified amount of funds to the specified recipient over at least one of the plurality of channels connected to the monetary transaction system."

m. ***[5l]: "notifying the unbanked subscriber that the specified amount of funds was transferred to the specified recipient over at least one of the plurality of channels connected to the monetary transaction system."***

174. Tumminaro discloses this limitation. Ex-1005, [0348]. Figure 16 includes the step of "**(4) The mobile payment service notifies source member A of payment**." Ex-1005, [0348], Figure 16. "**[Server platform 403 … sends a message] indicating that the payment had been made is sent to mobile phone 401**, as indicated by reference arrow 409." Ex-1005, [0254], Figure 4. Thus, person A ("unbanked subscriber") is notified that funds were transferred to person B ("specified recipient"). Furthermore, as described above, the funds are transferred "**over one of a plurality of channels**" connected to Tumminaro's mobile payment

system. *See* Ex-1005, [0353] ("mobile phone, instant messenger, e-mail, Web, debit card, WAP, SMS message, or dedicated mobile phone application").

2. Claim 7: *"The monetary transaction system of claim 5, wherein the money is transferred internationally between the mobile wallets."*

175. Tumminaro discloses this limitation. Ex-1005, [0882] ("[t]he [Mobile Client Application and Platform] MCAP is basically a 'mobile wallet' or 'pay by phone' consumer/mobile-merchant application."). Ex-1005, [0440] ("**the account holder may move money in seconds around *the world* or across a room**"), *id*., [0202] ("Account holders may also choose to link their account to a debit or credit cards offered by financial institution and which can be used at the millions of merchant locations **worldwide**.").

C. Ground 2: Claims 5-7 Are Rendered Obvious by Tumminaro in view of the background knowledge of a POSA

176. As discussed above, Tumminaro anticipates all limitations of claims 5 and 7. I incorporate my analysis of Ground 1 herein and provide my obviousness opinions for the applicable claim elements.

1. [5f]: "receiving subscriber communication over one of a plurality of channels connected to the monetary transaction system, the subscriber communication indicating that an unbanked subscriber desires to transfer a specified amount of funds to specified recipient using a specified payment method from the subscriber's mobile wallet;"

177. To the extent that Fintiv argues limitation 5[f] requires that the ***user*** specify or select a particular payment method for the transfer, there is nothing in the

claim that requires that functionality under the plain and ordinary meaning of its terms. Importantly, the specification of the '845 patent does not disclose a user selecting the specified payment method. Regardless, it would have been obvious to a POSA to modify Tumminaro in view of his or her own general background knowledge to modify Tumminaro so as to permit user selection of a specified payment method.

178. Tumminaro discloses that an unbanked user/member can specify a particular payment method. Tumminaro [0242] states "in an embodiment of the invention, a mobile device is associated to one or more bank accounts (checking, savings, **credit, prepaid**, or a **pooled account**, and the like)… Advantageously, the account holder can ***select the account from which funds are obtained*** to make a purchase in real time." (emphasis added). A POSA would have understood that this same disclosure applies to P2P transfers—there is no reason to include this functionality only for merchant purchases while excluding it for P2P transfers. Further, in connection with an embodiment in which "user A sends funds to user B via a unique identifier or ID," Tumminaro describes that "User A may also provide details of the financial transaction, such as the amount to be transferred, ***or the form of the payment***, or combinations of these, and a PIN number if requested to validate an account." *Id.,* [0334]-[0335] (emphasis added).

179. Tumminaro also describes that "linked accounts," can be saved in the user profile, including, for example, "linked bank accounts," and linked credit and debit cards. Ex-1005 at ¶¶ [0271], [0278], [0279], [0282]. Tumminaro explains that "account holders are not limited to a debit card with funds maintained in the pooled account," instead, "account holders may access a debit card account," can be "designated as the primary account." *Id.*, [0198]-[0199]. Thus a POSA reading Tumminaro would understand that an unbanked subscriber, whether he or she is a carded or no-card member, may add additional accounts, such as another stored value or prepaid debit card account, and that a user may be able to select between them for P2P transfers as disclosed for merchant payments.

180. To the extent that Tumminaro's person-to-person transfers do not explicitly disclose a "subscriber communication indicating . . . a specified payment method" by allowing the ***user*** to select the account from which funds are obtained in a P2P transfer, such a feature would have been an obvious modification of Tumminaro to a POSA at the time of invention. First, Tumminaro explicitly discloses a subscriber communication (e.g., from Member "A") that specifies a payee (e.g., member "B") and an amount to be paid that causes a transfer of funds from member A's account to member B's. *See, e.g.,* Fig. 16 [0348] ("The mobile payment service debits member [A's] pooled account and credits member B card account.") And as discussed above, Tumminaro expressly discloses permitting a

user to select the account from which funds are obtained to make a purchase, and characterizes this feature as "advantageous[]." *Id.*, [0242].

181. Likewise, a POSA would have been motivated to permit a payor to specify a particular funding source, such as another prepaid debit card or a gift card, to the system as part of communicating a transaction request for a P2P transfer. Such a predictable modification would further Tumminaro's goal of providing "a payment platform that provides a fast, easy way to make payments by individuals or merchants using their mobile devices to access [various] account[s]." *Id.*, [0143].

2. [5l]: "notifying the unbanked subscriber that the specified amount of funds was transferred to the specified recipient over at least one of the plurality of channels connected to the monetary transaction system."

182. I understand that Fintiv did not contend in district court that the order in which the method steps disclosed in claims 1 and 5 is a limitation on the claims. See Ex-1014. To the extent Fintiv now argues that claim 5 requires the "notifying …" step to be performed after the "transferring …" step, a POSA would have understood that modifying Tumminaro's flow in Figure 16 to change the order of these steps would be a trivial adjustment.

183. Tumminaro describes that particular steps (e.g., steps 6 and 7) may be "asynchronous server side threads." *See* Ex-1005, [0348]. A POSA would have accordingly understood that Tumminaro envisions multiple steps occurring at the same time such that the steps are not limited to following a pre-defined order or

sequence. Such a person would have also understood that in an asynchronous process, the start of one step does not necessarily require completion of one or more previous steps. Therefore, even though Tumminaro's Figure 16 shows the "notifying …" step occurring before the "transferring …" step, a POSA would have understood that because of the asynchronous nature of the steps, the ordering of the steps is not necessarily limited to a predefined sequence, and modifying Figure 16 to change the order of these steps would be trivial. Similarly, a POSA would have understood that modifying Tumminaro's flow to change the order of these steps would not render Tumminaro's system unsatisfactory for its intended purpose of performing a transaction. In other words, a POSA would recognize notifying the payer first and then debiting his/her account versus debiting the payer's account first and then notifying him/her is a simple decision choice and would in no way render Tumminaro's system unsatisfactory. To the contrary, there are benefits of doing so (*e.g.*, to avoid the scenario of incorrectly notifying a user that funds were deposited when, in fact, the system subsequently encountered a problem completing the deposit). Therefore, Tumminaro renders this limitation obvious in view of the background knowledge of POSA.

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3. Claim 6: *"The monetary transaction system of claim 5, wherein validating the status of the specified recipient comprises performing a check on the specified recipient to comply with the office of foreign assets control."*

184. Tumminaro renders this limitation obvious in view of the background knowledge of POSA. *See* Section IV.1.j. Additionally, Tumminaro discloses performing a check for compliance with the Office of Foreign Asset Control ("OFAC") for new account holders. Ex-1005, [0606]. A POSA would have understood that an OFAC compliance performed on new account holders would also include performing such a check on the specified recipient when s/he first opened her/his account. This would have the benefit of preventing fraud and enhancing security, which are important considerations in Tumminaro's system. *Id*., [0609].

185. To the extent not explicitly disclosed in Tumminaro, a POSA would have been motivated to apply the verification of a specified recipient to comply with the OFAC. The OFAC is part of the "US Department of the Treasury [which] administers and enforces economic and trade sanctions based on US foreign policy and national security goals against targeted foreign countries and regimes, terrorists, international narcotics traffickers, those engaged in activities related to the proliferation of weapons of mass destruction, and other threats to the national security, foreign policy or economy of the United States." EX-1019. A POSA would have been motivated to comply with OFAC to avoid having compliance issues with the U.S. Treasury.

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D. Ground 3: Claims 1-3 Are Rendered Obvious over Tumminaro, Keena, and the Background Knowledge of POSA

1. Claim 1

a. *[Preamble]: "A monetary transaction system for conducting monetary transactions between unbanked subscribers and other entities, the system comprising:"*

186. Ground 1 is incorporated by reference. Element [1Preamble] is taught by Tumminaro. *See* Section IV.1.a.

b. *[1a]: "a mobile device configured to run a monetary transaction system application;"*

187. Ground 1 is incorporated by reference. Element [1a] is taught by Tumminaro. *See* Section IV.1.b.

c. *[1b]: "an unbanked monetary transaction system subscriber that has a profile with the monetary transaction system, wherein the unbanked subscriber indicates, via the monetary transaction system application, one or more specified transactions that are to be performed using the monetary transaction system;"*

188. Ground 1 is incorporated by reference. Element [1b] is taught by Tumminaro. *See* Section IV.1.c.

d. ***[1c]: "a monetary transaction system processor that performs the one or more transactions specified by the unbanked subscriber, wherein performing the specified transactions includes communicating with a monetary transaction database to determine whether the transaction is permissible based on data indicated in the unbanked subscriber's profile;"***

189. Ground 1 is incorporated by reference. Element [1c] is taught by Tumminaro. *See* Section IV.1.d.

e. ***[1d]: "at least one entity that is to be involved in the specified transaction, the at least one entity having a profile with the monetary transaction system; and"***

190. Ground 1 is incorporated by reference. Element [1d] is taught by Tumminaro. *See* Section IV.1.e.

f. ***[1e]: "wherein the monetary transaction system is implemented to deposit funds at an agent branch through a mobile wallet, including performing the following steps:"***

191. Tumminaro discloses this limitation. Tumminaro's system allows deposit of funds at an agent branch to a mobile wallet account. Ex-1005, [0882] ("[t]he [Mobile Client Application and Platform] MCAP is basically a "mobile wallet" or "pay by phone" consumer/mobile-merchant application."). Ex-1005, [0604] ("At times, **account holders may add funds to the pooled account as indicated at 5302. Such funds may be deposited at a partner merchant that has agreed to accept funds from account holders which are then deposited into the pooled account**."). Ex-1005, [0173] ("**Merchants may use the POS terminals 311**

for financial transactions such as adding funds to a debit card for an account holder."); [0196] ("Money may be transferred… by depositing cash or check to the prepaid debit account (at a participating merchant or other third party."); [0174] ("most agents may also serve as load agents."); [0262] ("Loading of an account refers to transferring of funds to an account on the mobile payment system where funds may be transacted.").

192. Tumminaro discloses this limitation even under Fintiv's incorrect interpretation that does not require a physical agent branch, such as a bank or merchant/vendor point of sale. Ex-1005, [0604] ("Alternatively, the account holder may utilize their plastic debit card at an ATM to deposit cash or checks, on the Internet by making an account transfer by telephone, or automatically as specified on the user profile page associated with each account."). *See also id*., [0290]-[0292] and Figure 8.

g. ***[1f]: "receiving communication from an agent branch over one of a plurality of channels connected to the monetary transaction system, the agent communication indicating that the unbanked subscriber desires to deposit a specified amount of funds into the unbanked subscriber's mobile wallet account;"***

193. Tumminaro in combination with Keena and background knowledge of POSA renders this limitation obvious. As explained above, Tumminaro's "pooled account" serves as "the unbanked subscriber's mobile wallet account." *See* Ex-1005, [0447]. Tumminaro discloses a subscriber depositing funds into the pooled

account at a partner merchant ("agent branch"). Ex-1005, [0604] ("At times, a**ccount holders may add funds to the pooled account as indicated at 5302. Such funds may be deposited at a partner merchant that has agreed to accept funds from account holders which are then deposited into the pooled account**."); [0196] ("Money may be transferred from an existing account at a financial service provider partner (such as a banking institution) or by depositing cash or a check to the prepaid debit account (at a participating merchant or other third party).")

194. To the extent Tumminaro does not expressly disclose "**receiving communication from an agent branch … indicating that the unbanked subscriber desires to deposit a specified amount of funds into the unbanked subscriber's mobile wallet account**," a POSA would have been motivated to incorporate the vendor-submitted communication (sent by the vendor's POS) comprising a request indicating that a user desires to top-up his/her account, as taught in Keena, into Tumminaro's merchant POS, such that Tumminaro's payment server receives the vendor-submitted communication. The decision to send the initial request from the user's device or the vendor's device is a simple design choice, and a POSA would have been motivated to use the vendor communication for simplicity or to enhance security or reliability. For example, if the user's mobile device does not have cellular service, the top-up procedure cannot proceed. Additionally the user may be unfamiliar with the top up procedure and may incorrectly send the

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instructions, or send the wrong amount. Ex-1006, [0047]-[0051] ("**The cash top-up application … allows third party vendors to perform top-ups on behalf of users from a stored value account belonging to the vendor**. … In a particular example, a subscriber approaches the vendor with cash and requests a top-up for $50. **The vendor provides the top-up using their mobile phone as the point of sale device**, making payment for the transaction from their own stored value module in exchange for the cash. … The vendor provides the top-up using their mobile phone as the point of sale device, making payment for the transaction from their own stored value module in exchange for the cash. … **Using SMS the vendor types a predetermined syntax, which is configurable, wherein the vendor enters a command using syntax that includes the transaction type (e.g. TOP), the subscriber's phone number, and the amount. The vendor then submits *the request* (FIG. 2A) [to the mobile top-up system]**."). In the example shown in Figure 2A (reproduced below), the vendor-submitted communication states "Top 50 35386531998."



FIG. 2A

Ex-1006, Figure 2A.

195. A POSA would recognize that during a transaction involving an unbanked subscriber depositing funds into his/her account at the agent branch in the modified Tumminaro-Keena system, Tumminaro's modified POS sending the vendor-submitted communication would result in Tumminaro's payment server receiving such communication "over at least one of the plurality of channels connected to the monetary transaction system." Keena's use of *SMS* in sending the vendor-submitted communication serves as the "one of a plurality of channels connected to the monetary transaction system" for receiving the agent communication. Ex-1006, [0051] ("**Using SMS the vendor … submits the request**.) A POSA would have recognized that Keena's use of SMS as a channel is in no way limiting. Keena, in fact states that the SMS channel can be substituted for

"any other appropriate channel." Ex-1006, [0045]. Tumminaro also discloses communications over "one of a plurality of channels connected to the monetary transaction system." *See* Ex-1005, [0353]. Therefore, Tumminaro in combination with Keena and background knowledge of POSA renders this limitation obvious.

h. *[1g]: "validating the status of the unbanked subscriber's mobile wallet account;"*

196. Tumminaro renders this limitation under Petitioners' construction ("determining that the unbanked subscriber's mobile wallet account is allowed to receive the deposited funds.") obvious in view of Keena and the background knowledge of a POSA. Tumminaro discloses "funds may be deposited at a partner merchant that has agreed to accept funds from account holders which are then deposited into the pooled account." Ex-1005, [0604]. A POSA would have understood that in order to deposit funds into the pooled account, Tumminaro's system would necessarily need to validate that the user is a registered user or member of the system. Ex-1005, [0297] ("In a mobile payment system, registered users or members may send payment to other member or unregistered users or nonmembers."), And, id., ("existing members of a payment system can send funds to nonmembers (who may also be referred to as unregistered users"). The system would not be able to deposit funds into the subscriber's account if the subscriber lacks a valid account. Indeed Tumminaro explains that users are granted different privileges based on their respective "states." For example, users in the "enrolled"

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state can only "receive and request money." By contrast, users in the "verified state" may "add (i.e. load), or withdraw (i.e. unload) money" in addition to receiving and requesting money. Ex-1005 at [0276-77]. Thus the validation step satisfies the construction of this term discussed above.

i. *[1h]: "determining if the agent branch is authorized to receive deposited money;"*

197. Tumminaro in combination with Keena and background knowledge of POSA renders this limitation obvious. Only merchants that have pre-registered to serve as load agents may deposit funds for users in the Tumminaro system. Ex-1005 at [0604] ("**account holders may add funds to the pooled account as indicated at 5302. Such funds may be deposited at a partner merchant that *has agreed* to accept funds from account holders which are then deposited into the pooled account**."). Thus Tumminaro discloses determining whether a request to deposit funds originates from one of these partner merchants. There are significant fraud concerns with blindly accepting deposits from unauthorized agent branches. For example, an unauthorized agent branch could simply load money into a user's mobile wallet account without actually accepting any cash, and close down operations after the perpetrators of the fraud had withdrawn the funds in the form of cash at an authorized agent branch. It is exceedingly obvious that a monetary transaction system cannot simply accept unauthorized deposits, and a POSA would understand that the language in Tumminaro that the merchant ***"has agreed"*** to accept

funds means that the Tumminaro system only accepts deposits from merchants that have pre-registered or are otherwise authorized to act as load agents.

198. A POSA would have found it obvious to modify Tumminaro's system by incorporating Keena's *PIN challenge* technique of authenticating a vendor, such that the modified Tumminaro-Keena system includes functionality to determine if the agent branch is authorized to receive deposited money. Keena's PIN challenge technique involves a vendor receiving a PIN challenge question and the vendor then providing a response to the PIN challenge question. Ex-1006, [0051] ("**The mobile top-up system then sends the vendor a PIN challenge (FIG. 2B). The vendor replies with the PIN digits (FIG. 2C)**."). In this, the PIN challenge (illustrated in Figure 2B reproduced below) is a question that asks the vendor the second and fourth digits (*i.e.*, digits 2 and 4) of his/her PIN. The vendor response (illustrated in Figure 2C reproduced below) are the digits "11."



FIG. 2B



FIG. 2C

Ex-1006, Figures 2B-2C. A POSA would have understood that the underlying purpose of Keena's PIN challenge is to determine *whether the vendor performing the top-up for a user is authorized to receive deposited money*: "**Access control and authentication for mobile user is provided using PIN, partial PIN, derived PIN** and/or confirmation of additional details (such as personal information) as defined by the operator/distributor." *Id*., [0070].

199. A POSA would have recognized that during a transaction involving an unbanked subscriber depositing funds into his/her account at the agent branch in the modified Tumminaro-Keena system, Tumminaro's modified POS at the merchant/vendor/agent location receives (from Tumminaro's payment server) a PIN challenge (*e.g.*, as shown in Figure 2B) and then the vendor's response (*e.g.*, as shown in Figure 2C) to the PIN challenge is provided to Tumminaro's payment server, which together serve in Tumminaro's payment server to "determine[e] if the agent branch is authorized to receive deposited money."

200. Furthermore, a POSA would understand that Keena is concerned about determining if the agent branch is authorized to receive deposited money because it discloses providing vendors with PINs at the time of registering them. "**Following the registration of the vendor**, a wallet and a stored value module account are created for the vendor and linked to their MSISDN. **A secure PIN can then be generated and sent to the vendor's phone by SMS**." Ex-1006, [0055].

j. ***[1i]: "performing one or more of a limit check and a velocity check on the unbanked subscriber's mobile wallet account, the limit check determining whether sufficient funds are available to make the deposit amount, the velocity check determining whether the unbanked subscriber has exceeded a specified number of transactions within a specified time period;"***

201. The combination of Tumminaro and Keena renders obvious this limitation. Tumminaro and Keena disclose performing a limit check to determine whether sufficient funds are available to make the deposit amount. A merchant load agent will only deposit or top off as much funds as cash it physically receives from the unbanked subscriber. In the case of a human merchant, the merchant will physically count the cash received, and add the corresponding amount of funds via his or her POS terminal. In the case of an ATM or electronic load, the ATM will also count the cash received. Keena also discloses that its cash top-up application "allows third party vendors to perform top-ups on behalf of users from a stored value account belonging to the vendor." [0048]. Keena describes performing a check to determine whether the vendor has "sufficient funds or credit in [its] account to pay for the value" of the top-up on behalf of the cash paying customer. [0052] This check also discloses the claimed "limit check." Because the claim only requires at least one of a limit check and a velocity check based on an ordinary reading, Tumminaro in view of Keena renders this limitation obvious.

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202. Additionally, it would have been obvious at the time of invention to a POSA to implement either or both of limit and velocity checks. As discussed with respect to limitation 5[h], Tumminaro describes both limit checks and velocity checks. It would have been obvious to a POSA at the time of invention to implement one or both checks for a deposit, in order to safeguard against fraud and maintain compliance with AML regulations. For example, it may raise red flags to the fraud detection engine if a particular user makes a large number of, or amount of, cash deposits. Additionally, certain anti-money laundering (AML) regulations may limit the total amount of deposits in a given time period. Doing so would also reduce the incidence of fraud, as such a check could safeguard against a user depositing numerous counterfeit bills by separating a large deposit into numerous small deposits. It would have been obvious and predictable to a POSA to implement limit and velocity checks in the context of deposits.

k. ***[1j]: "crediting the unbanked subscriber's mobile wallet account with the specified amount of funds when the agent bank is authorized to receive the deposited money;"***

203. Tumminaro in combination with Keena and background knowledge of POSA renders this limitation obvious. As explained above, Tumminaro's "pooled account" serves as "the unbanked subscriber's mobile wallet account." *See* Ex-1005, [0447]. Tumminaro discloses "crediting the unbanked subscriber's mobile wallet account with the specified amount of funds." Ex-1005, [0604] ("At times, **account**

holders may add funds to the pooled account as indicated at 5302. Such funds may be deposited at a partner merchant that has agreed to accept funds from account holders which are then deposited into the pooled account.”). Thus, the result of funds deposited into the pooled account is “crediting the unbanked subscriber's mobile wallet account with the specified amount of funds.” And as explained above, as a result of incorporating Keena’s cash top-up method including the PIN challenge into Tumminaro’s system, the resulting Tumminaro-Keena system uses the vendor-provided response to the PIN challenge to determine “when the agent bank is authorized to receive the deposited money.” Ex-1006, [0051] and Figure 2C.

l. *[1k]: “returning a notification to the agent branch confirming the deposit; and”*

204. Tumminaro in combination with Keena and background knowledge of POSA renders this limitation obvious. As explained above, to the extent Fintiv argues Tumminaro does not disclose communication sent by an agent branch indicating that the unbanked subscriber desires to deposit a specified amount of funds into the unbanked subscriber's mobile wallet account, a POSA would have looked at Keena for disclosing this limitation. Doing so would result in the POSA incorporating Keena’s vendor-submitted communication (sent by the vendor’s POS) comprising a request indicating that a user desires to top-up his/her account into Tumminaro’s POS located at the agent branch. Ex-1006, [0051], Figure 2A. As also

explained above, in response to receiving the request, the resulting Tumminaro-Keena system sends a PIN challenge to the vendor who provides a response, which a POSA would have understood is used to validate the vendor. Ex-1006, [0051] and Figures 2B-2C.

205. Additionally, a POSA would have found it obvious to further modify Tumminaro's POS at the merchant/vendor/agent location by incorporating Keena's *top-up confirmation message sent to the vendor* such that the resulting Tumminaro-Keena system "return[s] a notification to the agent branch confirming the deposit." Ex-1006, [0051], ("**The vendor** replies with the PIN digits (FIG. 2C) and then **receives confirmation of the top-up including the new stored value module balance of $320 (FIG. 2D)**."). In the example shown in Figure 2D (reproduced below), the top-up confirmation message sent to the vendor states "Top-up Completed-Balance: 320."



FIG. 2D i

Ex-1006, Figure 2D. A POSA would have recognized that in the modified Tumminaro-Keena system, after the vendor is validated, Tumminaro's modified POS at the merchant/vendor/agent location receives a top-up confirmation message (*e.g.*, as shown in Figure 2D), which serves as Tumminaro's payment server "returning a notification to the agent branch confirming the deposit." One reason for modifying Tuminnaro in this way (*i.e.*, to send the vendor/agent a confirmation) is to prevent the vendor from submitting duplicate transaction requests.

m. ***[1l]: "notifying the subscriber that the specified amount of funds was deposited in the unbanked subscriber's mobile wallet account over at least one of the plurality of channels connected to the monetary transaction system."***

206. Tumminaro in combination with Keena and background knowledge of POSA renders this limitation obvious.

207. A POSA would have found it obvious to modify Tumminaro's system including the mobile client application running on the unbanked subscriber's mobile device by incorporating Keena's *top-up confirmation message sent to the subscriber* such that Tumminaro's payment server "notif[ies] the subscriber that the specified amount of funds was deposited in the unbanked subscriber's mobile wallet account." Ex-1006, [0051] ("**The subscriber also receives a top-up acknowledgement via SMS. (FIG. 2E)**."). In the example shown in Figure 2E (reproduced below), the top-up confirmation message sent to the subscriber states "Your Account Has Been Topped Up By 50."



FIG. 2E

Ex-1006, Figure 2E. A POSA would have recognized that in the modified Tumminaro-Keena system, the subscriber receives a top-up confirmation message

(*e.g.*, as shown in Figure 2E) on his/her mobile device, which serves as Tumminaro's payment server "notifying the subscriber that the specified amount of funds was deposited in the unbanked subscriber's mobile wallet account over at least one of the plurality of channels connected to the monetary transaction system." Keena's use of *SMS* in sending the top-up confirmation message sent to the subscriber serves as the "one of a plurality of channels connected to the monetary transaction system" for notifying the subscriber of the deposit. Ex-1006, [0051] ("**The subscriber also receives a top-up acknowledgement via SMS.**) It is common sense that users like knowing when their deposits have cleared so they can spend the money (e.g., pay a utility bill) with confidence that their payment will not be denied for insufficient funds. Moreover, the technology for sending notifications was well established by June of 2011 and a POSA would have every expectation of success implementing such notifications. Indeed, a POSA would have recognized that Keena's use of SMS as a channel is in no way limiting. Keena, in fact states that the SMS channel can be substituted for "any other appropriate channel." Ex-1006, [0045]. Tumminaro, taken alone or in combination with Keena, also discloses communications over "one of a plurality of channels connected to the monetary transaction system." *See* Ex-1005, [0353]. Accordingly, Tumminaro in combination with Keena and background knowledge of POSA renders this limitation obvious.

2. Claim 2: *"The monetary transaction system of claim 1, wherein the monetary transaction system application provides a web interface that allows subscribers to perform the same functions provided by the monetary transaction system application."*

208. Tumminaro discloses this limitation. Ex-1005, [0039] ("[T]he invention is a financial transactions system including a consumer interface, connected to a network, including: a Web interface to handle transaction requests from a Web browser client; a mobile Internet browser interface to handle transaction requests from a mobile Internet browser on a mobile phone client; an SMS interface to handle transaction requests using SMS text messaging; and a mobile client application interface to handle requests from a mobile client application executing on mobile phone client."). Ex-1005, [0353] ("payments may be requested from any of the available channels (e.g., mobile phone, instant messenger, e-mail, Web" and the "system may also be used to pay through payment terminals, interactive web sites"); *see also id*., [0034].

3. Claim 3: *"The monetary transaction system of claim 1, wherein the monetary transaction system application is provided on a prepaid or postpaid phone."*

209. Tumminaro discloses this limitation. Ex-1005, [0260] ("The system may interface with wireless phones handle by any of multiple carriers, such as Verizon, Cingular (AT&T), Sprint, Nextel, Alltel, Virgin Mobile, Amp'd Mobile, U.S. Cellular, T-Mobile, and others. **The service may also interface with prepaid**

phones."). Ex-1005, [0353] (Tumminaro's "**system may also be used to pay through** payment terminals, interactive web sites, … **prepaid phones**, and many others").

E. No Secondary Considerations of Nonobviousness Exist

210. Fintiv has not identified any secondary indicia of non-obviousness, and I am not aware of any. However, I reserve the right to supplement my opinions Patent Owner alleges or offers any purported evidence of objective indicia of non-obviousness.

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

Executed this 23rd day of March, 2023.

Respectfully submitted,



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Appendix A: Table of Challenged Claims of the ’845 Patent

Claim Element / Claim Number	Claim Language
1pre	“A monetary transaction system for conducting monetary transactions between unbanked subscribers and other entities, the system comprising:”
1a	“a mobile device configured to run a monetary transaction system application;”
1b	“an unbanked monetary transaction system subscriber that has a profile with the monetary transaction system, wherein the unbanked subscriber indicates, via the monetary transaction system application, one or more specified transactions that are to be performed using the monetary transaction system;”
1c	“a monetary transaction system processor that performs the one or more transactions specified by the unbanked subscriber, wherein performing the specified transactions includes communicating with a monetary transaction database to determine whether the transaction is permissible based on data indicated in the unbanked subscriber's profile;”
1d	“at least one entity that is to be involved in the specified transaction, the at least one entity having a profile with the monetary transaction system; and”
1e	“wherein the monetary transaction system is implemented to deposit funds at an agent branch through a mobile wallet, including performing the following steps:”
1f	“receiving communication from an agent branch over one of a plurality of channels connected to the monetary transaction system, the agent communication indicating that the unbanked subscriber desires to deposit a specified amount of funds into the unbanked subscriber's mobile wallet account;”
1g	“validating the status of the unbanked subscriber's mobile wallet account;”
1h	“determining if the agent branch is authorized to receive deposited money;”
1i	“performing one or more of a limit check and a velocity check on the unbanked subscriber's mobile wallet account, the limit check determining whether sufficient funds are available to make the deposit amount, the velocity check determining whether the unbanked subscriber has exceeded a specified number of transactions within a specified time period;”

1j	“crediting the unbanked subscriber's mobile wallet account with the specified amount of funds when the agent bank is authorized to receive the deposited money;”
1k	“returning a notification to the agent branch confirming the deposit; and”
1l	“notifying the subscriber that the specified amount of funds was deposited in the unbanked subscriber's mobile wallet account over at least one of the plurality of channels connected to the monetary transaction system.”
2	“The monetary transaction system of claim 1, wherein the monetary transaction system application provides a web interface that allows subscribers to perform the same functions provided by the monetary transaction system application.”
3	“The monetary transaction system of claim 1, wherein the monetary transaction system application is provided on a prepaid or postpaid phone.”
5pre	“A monetary transaction system for conducting monetary transactions between unbanked subscribers and other entities, the system comprising:”
5a	“a mobile device configured to run a monetary transaction system application;”
5b	“a monetary transaction system subscriber that has a profile with the monetary transaction system, wherein the subscriber indicates, via the monetary transaction system application, one or more specified transactions that are to be performed using the monetary transaction system;”
5c	“a monetary transaction system processor that performs the one or more transactions specified by the subscriber, wherein performing the specified transactions includes communicating with a monetary transaction database to determine whether the transaction is permissible based on data indicated in the subscriber’s profile;”
5d	“at least one entity that is to be involved in the specified transaction, the at least one entity having a profile with the monetary transaction system; and”
5e	“wherein the monetary transaction system is implemented to transfer money between mobile wallets, including performing the following steps;”
5f	“receiving subscriber communication over one of a plurality of channels connected to the monetary transaction system, the subscriber communication indicating that an unbanked subscriber desires to transfer a specified amount of funds to specified recipient using a specified payment method from the subscriber’s mobile wallet;”
5g	“validating the status of the selected payment method;”

5h	"performing at least one of a limit check and a velocity check on the selected payment method, the limit check determining whether sufficient funds are available to make the deposit amount, the velocity check determining whether the unbanked subscriber has exceeded a specified number of transactions within a specified time period;"
5i	"validating the status of the specified recipient to ensure the specified recipient has a valid mobile wallet account;"
5j	"debiting the specified payment method by the specified amount of funds;"
5k	"transferring the specified amount of funds to the specified recipient over at least one of the plurality of channels connected to the monetary transaction system;"
5l	"notifying the unbanked subscriber that the specified amount of funds was transferred to the specified recipient over at least one of the plurality of channels connected to the monetary transaction system."
6	"The monetary transaction system of claim 5, wherein validating the status of the specified recipient comprises performing a check on the specified recipient to comply with the office of foreign assets control."
7	"The monetary transaction system of claim 5, wherein the money is transferred internationally between the mobile wallets."

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