

organizing the sale of and purchasing cash cards or other prepaid cards, signing up authorized agents (such as banks or merchants, for example), and ensuring that the agents have access to funds to provide as part of the remittance transaction, among other steps. In addition, the current methods and systems for mobile remittance are difficult to use, especially in rural areas, where banks/Automated Teller Machines (ATMs) may not be as prevalent as in urban areas, and there is a risk that the mobile remittance may not reach the intended recipient.

**[0004]** There is a need in the art for methods and systems of mobile remittance that are network-agnostic and that allow transfer of funds across any network, regardless of whether these networks have or do not have direct funds transfer agreements between the initiating and receiving networks. There is another need in the art for mobile remittance transactions that are easy to use and secure, and that ensure that the mobile remittance reaches the intended recipient, regardless of whether the recipient is in an urban or rural area.

### **SUMMARY**

**[0005]** In light of the above described problems and unmet needs, aspects of the present invention solve the above-identified needs, as well as others, by providing methods and systems of mobile remittance that are network-agnostic and that allow transfer of funds across any network, regardless of whether these networks have or do not have funds transfer agreements among each other. In addition, aspects of the present invention provide methods and systems for mobile remittance transactions that are easy to use and secure, and that ensure that the

mobile remittance reaches the intended recipient, regardless of whether the recipient is in an urban or rural area.

[0006] Additional advantages and novel features of the invention will be set forth in part in the description that follows, and in part will become more apparent to those skilled in the art upon examination of the following or upon learning by practice of the invention.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

[0007] Various example aspects of the systems and methods will be described in detail, with reference to the following figures, wherein:

[0008] Figs. 1A-H illustrate various implementations in accordance with aspects of the present invention;

[0009] Figs. 2A-E illustrate various implementations in accordance with aspects of the present invention;

[0010] Figs. 3A-C illustrate various implementations in accordance with aspects of the present invention;

[0011] Fig. 4 presents an example system diagram of various hardware components and other features, for use in accordance with aspects of the present invention; and

[0012] Fig. 5 is a block diagram of various example system components, for use in accordance with aspects of the present invention.

### **DETAILED DESCRIPTION**

**[0013]** These and other features and advantages of this invention are described in, or are apparent from, the following detailed description of various example aspects.

**[0014]** Referring to Fig. 1A, therein shown is a local “on” net mobile SMS remittance system 100, including a mobile network 120 within a given country A, a mobile network 130 within the same country A, a mobile network 140 within a different country B, and a mobile network 150 within country B. Fig. 1A illustrates a remittance  $t$  being transferred between a sender 110, who is a subscriber of the mobile network 120, and another subscriber of the same mobile network A, in accordance with aspects of the present invention.

**[0015]** Referring to Fig. 1B, therein shown is a local “off” net mobile SMS remittance system 200, including a mobile network 220 within a given country A, a mobile network 230 within the same country A, a mobile network 240 within a different country B, and a mobile network 250 within country B. Fig. 1B illustrates a remittance  $t_1$  between two subscribers of different mobile networks 220 and 230, in accordance with aspects of the present invention.

**[0016]** Referring now to Fig. 1C, therein shown is an international on net mobile SMS remittance system 300, including a mobile network 320 within a given country A, a mobile network 330 within the same country A, a mobile network 340 within a different country B, and a mobile network 350 within country B. Fig. 1C illustrates a remittance  $t_2$  between two subscribers' mobile networks 320 and 340 located in two different countries, in accordance with aspects of the present invention.

**[0017]** As can be seen for Figs. 1A-C, SMS remittance messages, in accordance with aspects of the present invention, may be sent between two subscribers of any two networks, even networks supporting different carriers, as will be explained in more detail below, regardless of whether the networks have funds transfer agreements with each other or not.

**[0018]** In accordance with aspects of the present invention, the sender and recipient of the mobile SMS remittance may or may not have an account with a service provider, such as a remittance facilitation center.

**[0019]** Referring to Fig. 1D, therein shown is an example SMS telephonic transfer system 400 where the sender 410 has an account with the service provider, and the account has a positive value. According to various aspects, the sender 410 may send a SMS message from mobile network 420 in country A, for example, the SMS message including an M-Pin (a mobile pin number, for example), and an M-Credit (mobile credit, the specified amount of the transfer, for example) to a specific short code. It should be appreciated by those of ordinary skill in the art that this may be achieved via a web browser (e.g., via a Hypertext Transfer Protocol Secure (HTTPS) protocol), as an alternative to a mobile SMS message.

**[0020]** The SMS message may be forwarded to the service provider server 465 via, e.g., a Short Message Peer-to-Peer (SMPP) protocol 450 via the SMS hub 460, which may capture the sender's Mobile Subscriber Integrated Services Digital Network (MSISDN) number, may validate the sender via the MSISDN in the prepaid database 455, and may verify the balance in the sender's account. Upon a positive outcome of the validation of the sender and of the verification of the sender's

**[0022]** Fig. 1F is a flow chart illustrating a mobile device enabled fund transfer and cash out method, in accordance with aspects of the present invention.

According to various aspects, the method starts when a sender sends a remittance message to service provider server at S110, for example in the form of an SMS message sent from the sender's mobile device, as discussed above. The message may include, for example, a mobile pin number and a credit amount corresponding to funds to be transferred to a recipient. When the service provider receives the message from the recipient, the service provider may validate the remittance message at S120, for example by capturing the sender's MSISDN and comparing the sender's MSISDN to a reference database, and by verifying the sender's balance in the sender's account. When the sender has been validated at S120, the service provider may send a message to the recipient that may contain a system-generated serial number and/or gift card or other cash card or credit card number and the amount of funds destined to the recipient in the form of a M-Credit amount at S130.

**[0023]** According to various aspects, once the recipient receives the SMS message with the system-generated serial number and/or gift card or other cash card number and the M-Credit amount at S130, the recipient may approach an authorized agent and provide the system-generated serial number to the authorized agent at S140. According to various aspects, the recipient may provide the agent with only the system-generated serial number. At S150, after receiving the system-generated serial number, the agent may send the system-generated serial number to the service provider's server via SMS or web browser, for example, in order to obtain a funding credit corresponding to the amount of the remittance. Once the server

number at an authorized ATM or bank, thus bypassing the agent. The ATM bank may contact the service provider server to validate the serial number and the recipient's MSISDN. Once the verification is complete, the service provider server may provide a one-time PIN number (e.g., 6-digits) to the recipient. Upon entry of the appropriate PIN number, the ATM/bank may then dispense the correct amount to the recipient.

**[0025]** In accordance with some aspects, although the above discussion indicates that the service provider server communicates with the agent, the service provider may also communicate with main distributors (e.g., in-country partners), who in turn communicate with agents and/or recipients, when the agents are international agents and the in-country partners may be in a better position to communicate with the agents. Most or all members in the distribution hierarchy, which may include in-country partners and agents, may have M-wallets (e.g., a virtual pre-paid card), each of which has an initial value of \$0. The cash-out amount with commission may be credited to the M-wallet of the agent and to the in-country partner, if applicable, after the transaction is completed. The agents may be paid from the next level up, e.g. the in-country partner of the service provider, or from a lateral fellow-agent. Thus, the M-credits travel up the hierarchy, from the recipients to the service provider, while the funds travel down the hierarchy, from the service provider to the recipients. Payouts or settlements within the hierarch may be scheduled on any agreed-upon basis (e.g., daily, weekly, monthly).

**[0026]** An example payout/settlement in accordance with aspects of the present invention will now be described in reference to Fig.1G. According to various

According to various aspects, the recipient 720 may wish to become an agent 710, thereby decreasing the service provider overhead, as the transfers may now be from the M-wallet of the recipient-become-agent 720 to the M-wallet of another agent 710, for example. Thus, an intra-distribution system may expand.

**[0028]** Agent recruitment, in accordance with aspects of the present invention may be achieved via a potential agent sending a SMS message to a specific short code for agent registration. Upon receipt of the SMS message, the service provider may respond with an SMS containing an Agent ID (AID) and a message to contact the service provider. The service provider may create a new record with the new AID and the agent's MSISDN. To complete the registration, the new agent may contact the service provider to provide more information, although this may not be necessary, in accordance with some aspects, and the agent's record may be updated. Additional information, such as a starter kit including stickers, decal and instruction manual, among other starter kit items, may then be sent to the new agent.

**[0029]** Figs. 2A-E illustrate various implementations in accordance with aspects of the present invention. In Fig. 2A, a shopper 610 who may be, for example, online via a network such as, e.g., the Internet, may utilize a credit card 630 to place an order at a retailer's website 620. According to various aspects, the retailer may not have the ability to process the credit card 630. Accordingly, Figs. 2B-C illustrate a transaction involving the credit card 630 and the bank 640 that issued the credit card 630, where the bank 640 communicates with a payment gateway 650 corresponding to aspects of the current invention. As illustrated in Fig. 1C, the payment gateway 650 may communicate with the bank 640 to request

payment from the card issuing bank 640, and may keep the payment in a virtual account 660. According to various aspects, and as illustrated in Fig. 2D, the funds provided from the bank 640 and located in the virtual account 660 in the form of virtual funds may then be sent to a server 670 according to various aspects of the current invention, where the server 670 may be similar to the servers 465 and 565 discussed above. Accordingly, when the server 670 receives the virtual funds transferred by the bank 640 via the payment gateway 650, the server 670 may then, as illustrated in Fig. 2E, provide the virtual funds to a device 680 of the merchant, such as, e.g., a mobile device 680 of the merchant, via a mobile transaction as described above. As a result, the merchant may then utilize the device 680 to convert the virtual funds to real funds via, for example, an agent, or an ATM machine, as discussed above with respect to Fig. 1F, even when the merchant may not have the ability to process a credit card, as is sometimes the case in remote and under-developed parts of the world.

**[0030]** Figs. 3A-C illustrate various implementations in accordance with aspects of the present invention. In Fig. 3A, a shopper 710 who may be, for example, online via a network such as, e.g., the Internet, may utilize an affiliated pre-paid card 730 to place an order at a retailer's website 720. According to various aspects, the affiliated pre-paid card 730 may be card funded via a server according to various aspects of the current invention, where the funds have been verified, and the identity of the shopper 710 using the pre-paid card 730 has been validated, by the server. As such, funds from the prepaid card 730 may be transferred to the payment gateway 750, which may keep the payment in a virtual account. According

to various aspects, and as illustrated in Fig. 3B, the funds provided from the pre-paid card 730 and located in the virtual account in the form of virtual funds may then be sent to a server 770 according to various aspects of the current invention, where the server 770 may be similar to the servers 465 and 565 discussed above.

Accordingly, when the server 770 receives the virtual funds transferred by the pre-paid card 730 via the payment gateway 750, the server 770 may then, as illustrated in Fig. 3C, provide the virtual funds to a device 780 of the merchant, such as, e.g., a mobile device 780 of the merchant, via a mobile transaction. As a result, the merchant may then utilize the device 780 to convert the virtual funds to real funds via, for example, an agent, or an ATM machine, as discussed above with respect to Fig. 1F.

**[0031]** In some variations, aspects of the present invention may be directed toward one or more computer systems capable of carrying out the functionality described herein. An example of such a computer system 200 is shown in Fig. 4.

**[0032]** Computer system 200 includes one or more processors, such as processor 204. The processor 204 is connected to a communication infrastructure 206 (e.g., a communications bus, cross-over bar, or network). Various software aspects are described in terms of this example computer system. After reading this description, it will become apparent to a person skilled in the relevant art(s) how to implement the invention using other computer systems and/or architectures.

**[0033]** Computer system 200 can include a display interface 202 that forwards graphics, text, and other data from the communication infrastructure 206 (or from a frame buffer not shown) for display on a display unit 230. Computer system

a communications port, a Personal Computer Memory Card International Association (PCMCIA) slot and card, etc. Software and data transferred via communications interface 224 are in the form of signals 228, which may be electronic, electromagnetic, optical or other signals capable of being received by communications interface 224. These signals 228 are provided to communications interface 224 via a communications path (e.g., channel) 226. This path 226 carries signals 228 and may be implemented using wire or cable, fiber optics, a telephone line, a cellular link, a radio frequency (RF) link and/or other communications channels. In this document, the terms "computer program medium" and "computer usable medium" are used to refer generally to media such as a removable storage drive 214, a hard disk installed in hard disk drive 212, and signals 228. These computer program products provide software to the computer system 200. The invention is directed to such computer program products.

**[0036]** Computer programs (also referred to as computer control logic) are stored in main memory 208 and/or secondary memory 210. Computer programs may also be received via communications interface 224. Such computer programs, when executed, enable the computer system 200 to perform the features of the present invention, as discussed herein. In particular, the computer programs, when executed, enable the processor 210 to perform the features of the present invention. Accordingly, such computer programs represent controllers of the computer system 200.

**[0037]** In an aspect where the invention is implemented using software, the software may be stored in a computer program product and loaded into computer

system 200 using removable storage drive 214, hard drive 212, or communications interface 220. The control logic (software), when executed by the processor 204, causes the processor 204 to perform the functions of the invention as described herein. In another aspect, the invention is implemented primarily in hardware using, for example, hardware components, such as application specific integrated circuits (ASICs). Implementation of the hardware state machine so as to perform the functions described herein will be apparent to persons skilled in the relevant art(s).

**[0038]** In yet another aspect, the invention is implemented using a combination of both hardware and software.

**[0039]** Fig. 5 shows a communication system 300 involving use of various features in accordance with aspects of the present invention. The communication system 300 includes one or more assessors 360, 362 (also referred to interchangeably herein as one or more “users”) and one or more terminals 342, 366 accessible by the one or more assessors 360, 362. In one aspect, operations in accordance with aspects of the present invention is, for example, input and/or accessed by an accessor 360 via terminal 342, such as personal computers (PCs), minicomputers, mainframe computers, microcomputers, telephonic devices, or wireless devices, such as personal digital assistants (“PDAs”) or a hand-held wireless devices coupled to a remote device 343, such as a server, PC, minicomputer, mainframe computer, microcomputer, or other device having a processor and a repository for data and/or connection to a repository for data, via, for example, a network 344, such as the Internet or an intranet, and couplings 345, 364. The couplings 345, 364 include, for example, wired, wireless, or fiberoptic links. In

another aspect, the method and system of the present invention operate in a stand-alone environment, such as on a single terminal.

**[0040]** While this invention has been described in conjunction with the example aspects outlined above and further described in Attachment A), various alternatives, modifications, variations, improvements, and/or substantial equivalents, whether known or that are or may be presently unforeseen, may become apparent to those having at least ordinary skill in the art. Accordingly, the example aspects of the invention, as set forth above, are intended to be illustrative, not limiting. Various changes may be made without departing from the spirit and scope of the invention. Therefore, the invention is intended to embrace all known or later-developed alternatives, modifications, variations, improvements, and/or substantial equivalents.

organizing the sale of and purchasing cash cards or other prepaid cards, signing up authorized agents (such as banks or merchants, for example), and ensuring that the agents have access to funds to provide as part of the remittance transaction, among other steps. In addition, the current methods and systems for mobile remittance are difficult to use, especially in rural areas, where banks/Automated Teller Machines (ATMs) may not be as prevalent as in urban areas, and there is a risk that the mobile remittance may not reach the intended recipient.

**[0004]** There is a need in the art for methods and systems of mobile remittance that are network-agnostic and that allow transfer of funds across any network, regardless of whether these networks have or do not have direct funds transfer agreements between the initiating and receiving networks. There is another need in the art for mobile remittance transactions that are easy to use and secure, and that ensure that the mobile remittance reaches the intended recipient, regardless of whether the recipient is in an urban or rural area.

### **SUMMARY**

**[0004a]** The invention is defined in the independent claims. Some optional features of the invention are defined in the dependent claims.

**[0005]** In light of the above described problems and unmet needs, the techniques disclosed herein may solve the above-identified needs, as well as others, by providing methods and systems of mobile remittance that are network-agnostic and that allow transfer of funds across any network, regardless of whether these networks have or do not have funds transfer agreements among each other. In addition, the techniques disclosed herein may provide for mobile remittance transactions that are easy to use and secure, and that ensure that the

mobile remittance reaches the intended recipient, regardless of whether the recipient is in an urban or rural area.

**[0006]** Additional advantages and novel features will be set forth in part in the description that follows, and in part will become more apparent to those skilled in the art upon examination of the following or upon learning by practice.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

**[0007]** Various example aspects of the systems and methods will be described in detail, with reference to the following figures, wherein:

**[0008]** Figs. 1A-H illustrate various exemplary techniques;

**[0009]** Figs. 2A-E illustrate various exemplary techniques;

**[0010]** Figs. 3A-C illustrate various exemplary techniques;

**[0011]** Fig. 4 presents an example system diagram of various hardware components and other features, for use in accordance with the techniques disclosed herein; and

**[0012]** Fig. 5 is a block diagram of various example system components, for use in accordance with the techniques disclosed herein.

### **DETAILED DESCRIPTION**

**[0013]** These and other features and advantages are described in, or are apparent from, the following detailed description of various example aspects.

**[0014]** Referring to Fig. 1A, therein shown is a local "on" net mobile SMS remittance system 100, including a mobile network 120 within a given country A, a mobile network 130 within the same country A, a mobile network 140 within a different country B, and a mobile network 150 within country B. Fig. 1A illustrates a remittance t being transferred between a sender 110, who is a subscriber of the mobile network 120, and another subscriber of the same mobile network A.

**[0015]** Referring to Fig. 1 B, therein shown is a local "off" net mobile SMS remittance system 200, including a mobile network 220 within a given country A, a mobile network 230 within the same country A, a mobile network 240 within a different country B, and a mobile network 250 within country B. Fig. 1 B illustrates a remittance t1 between two subscribers of different mobile networks 220 and 230.

**[0016]** Referring now to Fig. 1 C, therein shown is an international on net mobile SMS remittance system 300, including a mobile network 320 within a given country A, a mobile network 330 within the same country A, a mobile network 340 within a different country B, and a mobile network 350 within country B. Fig. 1 C illustrates a remittance t2 between two subscribers' mobile networks 320 and 340 located in two different countries.

**[0017]** As can be seen for Figs. 1A-C, SMS remittance messages may be sent between two subscribers of any two networks, even networks supporting different carriers, as will be explained in more detail below, regardless of whether the networks have funds transfer agreements with each other or not.

**[0018]** The sender and recipient of the mobile SMS remittance may or may not have an account with a service provider, such as a remittance facilitation center.

**[0019]** Referring to Fig. 1D, therein shown is an example SMS telephonic transfer system 400 where the sender 410 has an account with the service provider, and the account has a positive value. According to various aspects, the sender 410 may send a SMS message from mobile network 420 in country A, for example, the SMS message including an M-Pin (a mobile pin number, for example), and an M-Credit (mobile credit, the specified amount of the transfer, for example) to a specific short code. It should be appreciated by those of ordinary skill in the art that this may be achieved via a web browser (e.g., via a Hypertext Transfer Protocol Secure (HTTPS) protocol), as an alternative to a mobile SMS message.

**[0020]** The SMS message may be forwarded to the service provider server 465 via, e.g., a Short Message Peer-to-Peer (SMPP) protocol 450 via the SMS hub 460, which may capture the sender's Mobile Subscriber Integrated Services Digital Network (MSISDN) number, may validate the sender via the MSISDN in the prepaid database 455, and may verify the balance in the sender's account. Upon a positive outcome of the validation of the sender and of the verification of the sender's

**[0022]** Fig. 1 F is a flow chart illustrating a mobile device enabled fund transfer and cash out method.

According to various aspects, the method starts when a sender sends a remittance message to service provider server at S10, for example in the form of an SMS message sent from the senders mobile device, as discussed above. The message may include, for example, a mobile pin number and a credit amount corresponding to funds to be transferred to a recipient. When the service provider receives the message from the recipient, the service provider may validate the remittance message at S120, for example by capturing the sender's MSISDN and comparing the sender's MSISDN to a reference database, and by verifying the sender's balance in the sender's account. When the sender has been validated at S120, the service provider may send a message to the recipient that may contain a system-generated serial number and/or gift card or other cash card or credit card number and the amount of funds destined to the recipient in the form of a M-Credit amount at S130.

**[0023]** According to various aspects, once the recipient receives the SMS message with the system-generated serial number and/or gift card or other cash card number and the M-Credit amount at S130, the recipient may approach an authorized agent and provide the system-generated serial number to the authorized agent at S140. According to various aspects, the recipient may provide the agent with only the system-generated serial number. At S150, after receiving the system-generated serial number, the agent may send the system-generated serial number to the service provider's server via SMS or web browser, for example, in order to obtain a funding credit corresponding to the amount of the remittance. Once the server

number at an authorized ATM or bank, thus bypassing the agent. The ATM bank may contact the service provider server to validate the serial number and the recipient's MSISDN. Once the verification is complete, the service provider server may provide a one-time PIN number (e.g., 6-digits) to the recipient. Upon entry of the appropriate PIN number, the ATM/bank may then dispense the correct amount to the recipient.

**[0025]** In accordance with some aspects, although the above discussion indicates that the service provider server communicates with the agent, the service provider may also communicate with main distributors (e.g., in-country partners), who in turn communicate with agents and/or recipients, when the agents are international agents and the in-country partners may be in a better position to communicate with the agents. Most or all members in the distribution hierarchy, which may include in-country partners and agents, may have M-wallets (e.g., a virtual pre-paid card), each of which has an initial value of \$0. The cash-out amount with commission may be credited to the M-wallet of the agent and to the in-country partner, if applicable, after the transaction is completed. The agents may be paid from the next level up, e.g. the in-country partner of the service provider, or from a lateral fellow-agent. Thus, the M-credits travel up the hierarchy, from the recipients to the service provider, while the funds travel down the hierarchy, from the service provider to the recipients. Payouts or settlements within the hierarchy may be scheduled on any agreed-upon basis (e.g., daily, weekly, monthly).

**[0026]** An example payout/settlement will now be described in reference to Fig. 1 G. According to various

According to various aspects, the recipient 720 may wish to become an agent 710, thereby decreasing the service provider overhead, as the transfers may now be from the M-wallet of the recipient-become-agent 720 to the M-wallet of another agent 710, for example. Thus, an intra-distribution system may expand.

**[0028]** Agent recruitment may be achieved via a potential agent sending a SMS message to a specific short code for agent registration. Upon receipt of the SMS message, the service provider may respond with an SMS containing an Agent ID (AID) and a message to contact the service provider. The service provider may create a new record with the new AID and the agent's MSISDN. To complete the registration, the new agent may contact the service provider to provide more information, although this may not be necessary, in accordance with some aspects, and the agent's record may be updated. Additional information, such as a starter kit including stickers, decal and instruction manual, among other starter kit items, may then be sent to the new agent.

**[0029]** Figs. 2A-E illustrate various implementations. In Fig. 2A, a shopper 610 who may be, for example, online via a network such as, e.g., the Internet, may utilize a credit card 630 to place an order at a retailer's website 620. According to various aspects, the retailer may not have the ability to process the credit card 630. Accordingly, Figs. 2B-C illustrate a transaction involving the credit card 630 and the bank 640 that issued the credit card 630, where the bank 640 communicates with a payment gateway 650. As illustrated in Fig. 1 C, the payment gateway 650 may communicate with the bank 640 to request

payment from the card issuing bank 640, and may keep the payment in a virtual account 660. According to various aspects, and as illustrated in Fig. 2D, the funds provided from the bank 640 and located in the virtual account 660 in the form of virtual funds may then be sent to a server 670, where the server 670 may be similar to the servers 465 and 565 discussed above. Accordingly, when the server 670 receives the virtual funds transferred by the bank 640 via the payment gateway 650, the server 670 may then, as illustrated in Fig. 2E, provide the virtual funds to a device 680 of the merchant, such as, e.g., a mobile device 680 of the merchant, via a mobile transaction as described above. As a result, the merchant may then utilize the device 680 to convert the virtual funds to real funds via, for example, an agent, or an ATM machine, as discussed above with respect to Fig. 1 F, even when the merchant may not have the ability to process a credit card, as is sometimes the case in remote and under-developed parts of the world.

**[0030]** Figs. 3A-C illustrate various implementations. In Fig. 3A, a shopper 710 who may be, for example, online via a network such as, e.g., the Internet, may utilize an affiliated prepaid card 730 to place an order at a retailer's website 720. According to various aspects, the affiliated pre-paid card 730 may be card funded via a server, where the funds have been verified, and the identity of the shopper 710 using the pre-paid card 730 has been validated, by the server. As such, funds from the prepaid card 730 may be transferred to the payment gateway 750, which may keep the payment in a virtual account. According

to various aspects, and as illustrated in Fig. 3B, the funds provided from the pre-paid card 730 and located in the virtual account in the form of virtual funds may then be sent to a server 770, where the server 770 may be similar to the servers 465 and 565 discussed above.

Accordingly, when the server 770 receives the virtual funds transferred by the prepaid card 730 via the payment gateway 750, the server 770 may then, as illustrated in Fig. 3C, provide the virtual funds to a device 780 of the merchant, such as, e.g., a mobile device 780 of the merchant, via a mobile transaction. As a result, the merchant may then utilize the device 780 to convert the virtual funds to real funds via, for example, an agent, or an ATM machine, as discussed above with respect to Fig. 1 F.

**[0031]** Some variations may be directed toward one or more computer systems capable of carrying out the functionality described herein. An example of such a computer system 200 is shown in Fig. 4.

**[0032]** Computer system 200 includes one or more processors, such as processor 204. The processor 204 is connected to a communication infrastructure 206 (e.g., a communications bus, cross-over bar, or network). Various software aspects are described in terms of this example computer system. After reading this description, it will become apparent to a person skilled in the relevant art(s) how to implement these techniques using other computer systems and/or architectures.

**[0033]** Computer system 200 can include a display interface 202 that forwards graphics, text, and other data from the communication infrastructure 206 (or from a frame buffer not shown) for display on a display unit 230. Computer system

a communications port, a Personal Computer Memory Card International Association (PCMCIA) slot and card, etc. Software and data transferred via communications interface 224 are in the form of signals 228, which may be electronic, electromagnetic, optical or other signals capable of being received by communications interface 224. These signals 228 are provided to communications interface 224 via a communications path (e.g., channel) 226. This path 226 carries signals 228 and may be implemented using wire or cable, fiber optics, a telephone line, a cellular link, a radio frequency (RF) link and/or other communications channels. In this document, the terms "computer program medium" and "computer usable medium" are used to refer generally to media such as a removable storage drive 214, a hard disk installed in hard disk drive 212, and signals 228. These computer program products provide software to the computer system 200.

**[0036]** Computer programs (also referred to as computer control logic) are stored in main memory 208 and/or secondary memory 210. Computer programs may also be received via communications interface 224. Such computer programs, when executed, enable the computer system 200 to perform the features of the present techniques, as discussed herein. In particular, the computer programs, when executed, enable the processor 210 to perform these techniques. Accordingly, such computer programs represent controllers of the computer system 200.

**[0037]** In a technique implementing software, the software may be stored in a computer program product and loaded into computer

system 200 using removable storage drive 214, hard drive 212, or communications interface 220. The control logic (software), when executed by the processor 204, causes the processor 204 to perform the functionality as described herein. In another aspect, the techniques may be implemented primarily in hardware using, for example, hardware components, such as application specific integrated circuits (ASICs). Implementation of the hardware state machine so as to perform the functions described herein will be apparent to persons skilled in the relevant art(s).

**[0038]** In yet another aspect, these techniques are implemented using a combination of both hardware and software.

**[0039]** Fig. 5 shows a communication system 300 involving use of various features. The communication system 300 includes one or more assessors 360, 362 (also referred to interchangeably herein as one or more "users") and one or more terminals 342, 366 accessible by the one or more assessors 360, 362. In one aspect, operations, for example, input and/or accessed by an accessor 360 via terminal 342, such as personal computers (PCs), minicomputers, mainframe computers, microcomputers, telephonic devices, or wireless devices, such as personal digital assistants ("PDAs") or a hand-held wireless devices coupled to a remote device 343, such as a server, PC, minicomputer, mainframe computer, microcomputer, or other device having a processor and a repository for data and/or connection to a repository for data, via, for example, a network 344, such as the Internet or an intranet, and couplings 345, 364. The couplings 345, 364 include, for example, wired, wireless, or fiberoptic links. In

another aspect, the methods and systems disclosed herein may operate in a standalone environment, such as on a single terminal.

**[0040]** While this invention has been described in conjunction with the example aspects outlined above, various alternatives, modifications, variations, improvements, and/or substantial equivalents, whether known or that are or may be presently unforeseen, may become apparent to those having at least ordinary skill in the art. Accordingly, the example aspects, as set forth above, are intended to be illustrative, not limiting. Various changes may be made without departing from the scope of the appended claims. Therefore, the claims are intended to embrace all known or later-developed alternatives, modifications, variations, improvements, and/or substantial equivalents.