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(71) Applicant(s)
Visa U.S.A. Inc.

(72) Inventor(s)
Stan, Patrick;Carlson, Mark;Faith, Patrick

(74) Agent / Attorney
Spruson & Ferguson, Level 35 St Martins Tower 31 Market Street, Sydney, NSW, 2000

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(71) Applicant (for all designated States except US): **VISA U.S.A. INC.** [US/US]; P.O. Box 8999, M3-2B, San Francisco, California 94128 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CARLSON, Mark** [US/US]; 153 Miramonte Avenue, Half Moon Bay, California 94019 (US). **STAN, Patrick** [US/US]; California (US). **FAITH, Patrick** [US/US]; 2810 Jones Gate Court, Pleasanton, California 94566 (US).

(74) Agents: **JEWIK, Patrick, R.** et al.; Townsend and Townsend and Crew LLP, Two Embarcadero Center, 8th Floor, San Francisco, California 94111-3834 (US).

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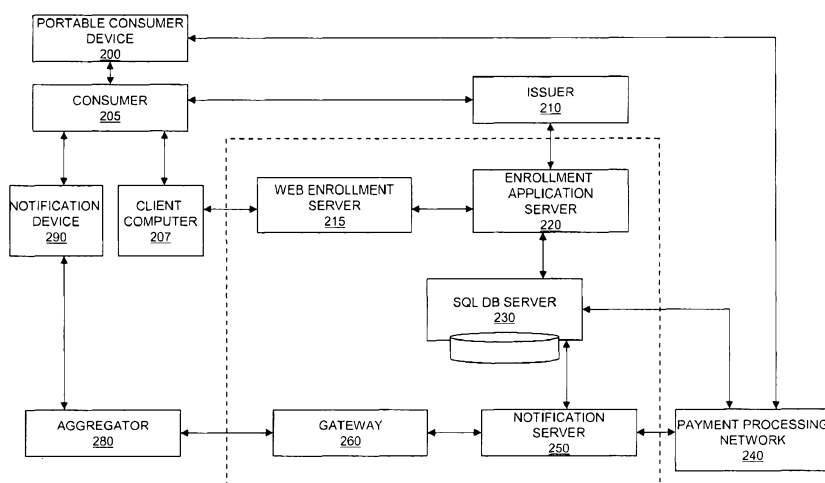
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(54) Title: CUSTOMIZED PAYMENT TRANSACTION NOTIFICATION



(57) Abstract: A method for customizing alerts and notifications for portable consumer device transactions is disclosed. One embodiment of the invention is directed to a method comprising receiving information that a transaction associated with a portable consumer device is occurring, and providing an alert to a consumer associated with the portable consumer device, wherein the alert indicates that the transaction is occurring, wherein the alert is sent to the consumer according to a time or communication mode previously specified by the consumer using an interface that allows the user to specify the time and communication mode for receiving the alert.

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CUSTOMIZED PAYMENT TRANSACTION NOTIFICATION

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] The present application is a non-provisional application of and claims priority to U.S. Provisional Application No. 60/871,898, filed on December 26, 2006, the entire contents of which are herein incorporated by reference for all purposes.

BACKGROUND

[0002] There are many occasions where a consumer may want to be notified when his credit card or the like is used. For example, he may want to know when his credit card account number has been used to purchase a large screen television for \$5000 on the Internet, when the account number is used outside the U.S. to purchase airplane tickets, or when his child uses the account number or credit card to purchase alcohol.

[0003] A consumer may be notified by the issuer that issued his credit card when the issuer determines a potentially fraudulent activity has occurred in a purchase with the consumer's credit card. The issuer may contact the consumer using the contact information it has on file for the consumer, which is typically a consumer's home phone and address. For example, the issuer may call the consumer at his home phone number or send a letter to his home address informing the consumer that potentially fraudulent or unauthorized activity is taking place. However, the consumer may not be at home or may not answer the phone and a letter may take a few days to arrive at the consumer's home. Further, the activity may occur in the early hours of the morning outside of the issuer's business hours and when the consumer does not want to receive a call. For example, if a potentially fraudulent purchase is made with the consumer's credit card at 2 a.m. in the morning, the consumer may be asleep. Thus, conventional notification methods may not be very effective for notifying the consumer of potentially fraudulent or unauthorized credit card activity.

[0004] A need exists to address these and other problems individually and collectively

SUMMARY

[0005] It is an object of the present disclosure to substantially overcome, or at least ameliorate, at least one disadvantage of present arrangements.

[0006] Embodiments of the present disclosure are directed to improved consumer notification systems and methods.

[0007] A first aspect of the present disclosure is directed to a method comprising receiving, at a payment processing network, an authorization request message that includes information to indicate that a transaction associated with a portable consumer device is occurring, wherein the payment processing network is configured to process credit and debit card transactions; determining, using the payment processing network, that an alert should be provided to a consumer associated with the portable consumer device based on the information included in the authorization request message; and providing an alert to a consumer associated with the portable consumer device, wherein the alert indicates that the transaction is occurring, wherein the alert is sent to the consumer according to a time communication mode previously specified by the consumer using an interface that allows the user to specify the time and communication mode for receiving the alert.

[0008] Another aspect of the present disclosure is directed to a client computer comprising a processor, and a computer readable medium, wherein the computer readable medium comprises instructions for executing a method comprising receiving information on how to be notified if a predetermined activity is occurring with respect to a portable consumer device, wherein an alert is provided in manner consistent with the information provided if the predetermined activity is occurring wherein the information provided is a result of a consumer's choice to customize an alert for each predetermined activity by using an interface that allows a user to customize the alert according to at least communication code and time, and wherein information included in an authorization request message received at a payment processing network indicates that the predetermined activity with respect to the portable consumer device is occurring and wherein the alert is provided based on information included in the authorization request message; and sending the information to a notification server.

[0009] Another aspect of the present disclosure is directed to a phone comprising a processor, and a computer readable medium coupled to the processor, wherein the computer readable medium comprises code for receiving an alert, wherein the alert indicates that the transaction is occurring, wherein the alert is sent to the consumer according to a time or communication mode previously specified by the consumer using

an interface that allows the consumer to specify the time and communication mode for receiving the alert.

[0010] Other aspects of the present disclosure are directed to computer readable media comprising code for performing the above-described methods as well as systems, apparatuses and devices that perform the method and/or that use the computer readable media.

[0011] These and other embodiments of the invention are described in further detail below.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1(a) shows a block diagram of a payment processing system according to an embodiment of the invention.

[0013] FIG. 1(b) shows a block diagram of an exemplary portable consumer device.

[0014] FIG. 2 shows a block diagram of a system according to an embodiment of the invention.

[0015] FIG. 3 shows a flowchart illustrating steps in a method according to an embodiment of the invention.

[0016] FIG. 4 shows a Web page illustrating notification parameters chosen by a consumer.

[0017] FIG. 5 shows a block diagram of a computer apparatus.

DETAILED DESCRIPTION

[0018] Customized payment transaction notification systems and methods are described in further detail below. They can be used in the context of payment transactions using payment processing systems, which are configured to process credit and debit card transactions.

[0019] I. **Payment Processing Systems**

[0020] Embodiments of the invention are directed to the use of portable consumer devices, and methods and systems that use them. The portable consumer devices can be used in payment processing systems like those shown in FIG. 1(a).

[0021] FIG. 1(a) shows a system **20** that can be used in an embodiment of the invention. For simplicity of illustration, one merchant, one issuer, one acquirer, one portable consumer device, and one consumer are shown. It is understood however, that embodiments of the invention may include multiple merchants, issuers, acquirers, portable consumer devices, and/or consumers. In addition, some embodiments of the invention may include fewer than all of the components shown in FIG. 1(a). Also, the components in FIG. 1(a) may communicate via any suitable communication medium (including the Internet), using any suitable communication protocol.

[0022] The system **20** includes a merchant **22** and an acquirer **24** associated with the merchant **22**. In a typical payment transaction, a consumer **30** may purchase goods or services at the merchant **22** using a portable consumer device **32**. The acquirer **24** can communicate with an issuer **28** via a payment processing network **26**.

[0023] The acquirer **24** is typically a bank that has a merchant account. The issuer **28** may also be a bank, but could also be business entity such as a retail store. Some entities are both acquirers and issuers, and embodiments of the invention include such entities. The issuer **28** may operate a server computer **21**, which may have a computer readable medium comprising code for performing the functions that the issuer **28** performs. A database **23** comprising account number

information and other information may be operatively coupled to the server computer 21.

[0024] The consumer 30 may be an individual, or an organization such as a business that is capable of purchasing goods or services.

[0025] The portable consumer device 32 may be in any suitable form. For example, suitable portable consumer devices can be hand-held and compact so that they can fit into a consumer's wallet and/or pocket (e.g., pocket-sized). They may include smart cards, ordinary credit or debit cards (with a magnetic strip and without a microprocessor), keychain devices (such as the Speedpass™ commercially available from Exxon-Mobil Corp.), etc. Other examples of portable consumer devices include cellular or mobile phones, personal digital assistants (PDAs), pagers, payment cards, security cards, access cards, smart media, transponders, and the like. The portable consumer devices can also be debit devices (e.g., a debit card), credit devices (e.g., a credit card), or stored value devices (e.g., a stored value card).

[0026] The portable consumer device 32 may comprise a computer readable medium (CRM) 32(a) and a body 32(b). The computer readable medium 32(a) may be on the body 32(b). The body 32(b) may in the form a plastic substrate, housing, or other structure. The computer readable medium 32(a) may be a memory that stores data and may be in any suitable form. Exemplary computer readable media 32(a) may be in any suitable form including a magnetic stripe, a memory chip, etc. If the portable consumer device 32 is in the form of a card, it may have an embossed region 32(a) which is embossed with a PAN (primary account number).

[0027] An exemplary wireless portable consumer device 32' in the form of a phone may comprise a computer readable medium and a body as shown in FIG. 1(b). (FIG. 1(b) shows a number of components, and the portable consumer devices according to embodiments of the invention may comprise any suitable combination or subset of such components.) The computer readable medium 32(b) may be present within the body 32(h), or may be detachable from it. The body 32(h) may be in the form a plastic substrate, housing, or other structure. The computer readable medium 32(b) may be a memory that stores data and may be in any suitable form including a magnetic stripe, a memory chip, etc. The memory preferably stores

information such as financial information, transit information (e.g., as in a subway or train pass), access information (e.g., as in access badges), etc. Financial information may include information such as bank account information, bank identification number (BIN), credit or debit card number information, account balance information, expiration date, consumer information such as name, date of birth, etc. Any of this information may be transmitted by the portable consumer device **32'**.

[0028] In some embodiments, and regardless of the type of wireless portable consumer device that is used, information in the memory may also be in the form of data tracks that are traditionally associated with credits cards. Such tracks include Track 1 and Track 2. Track 1 ("International Air Transport Association") stores more information than Track 2, and contains the cardholder's name as well as account number and other discretionary data. This track is sometimes used by the airlines when securing reservations with a credit card. Track 2 ("American Banking Association") is currently most commonly used. This is the track that is read by ATMs and credit card checkers. The ABA (American Banking Association) designed the specifications of this track and all world banks must abide by it. It contains the cardholder's account, encrypted PIN, plus other discretionary data.

[0029] The portable consumer device **32'** may further include a contactless element **32(g)**, which is typically implemented in the form of a semiconductor chip (or other data storage element) with an associated wireless transfer (e.g., data transmission) element, such as an antenna. Contactless element **32(g)** is associated with (e.g., embedded within) portable consumer device **32'** and data or control instructions transmitted via a cellular network may be applied to contactless element **32(g)** by means of a contactless element interface (not shown). The contactless element interface functions to permit the exchange of data and/or control instructions between the mobile device circuitry (and hence the cellular network) and an optional contactless element **32(g)**.

[0030] Contactless element **32(g)** is capable of transferring and receiving data using a near field communications ("NFC") capability (or near field communications medium) typically in accordance with a standardized protocol or data transfer mechanism (e.g., ISO 14443/NFC). Near field communications capability is a short-range communications capability, such as RFID, BluetoothTM, infra-red, or other data

transfer capability that can be used to exchange data between the portable consumer device **32'** and an interrogation device. Thus, the portable consumer device **32'** is capable of communicating and transferring data and/or control instructions via both cellular network and near field communications capability.

[0031] The portable consumer device **32'** may also include a processor **32(c)** (e.g., a microprocessor) for processing the functions of the portable consumer device **32'** and a display **32(d)** to allow a consumer to see phone numbers and other information and messages. The portable consumer device **32'** may further include input elements **32(e)** to allow a consumer to input information into the device, a speaker **32(f)** to allow the consumer to hear voice communication, music, etc., and a microphone **32(i)** to allow the consumer to transmit her voice through the portable consumer device **32'**. The portable consumer device **32'** may also include an antenna **32(a)** for wireless data transfer (e.g., data transmission).

[0032] Referring again to FIG. 1(a), the payment processing network **26** may include data processing subsystems, networks, and operations used to support and deliver authorization services, exception file services, and clearing and settlement services. An exemplary payment processing network may include VisaNet™. Payment processing networks such as VisaNet™ are able to process credit card transactions, debit card transactions, and other types of commercial transactions. VisaNet™, in particular, includes a VIP system (Visa Integrated Payments system) which processes authorization requests and a Base II system which performs clearing and settlement services.

[0033] The payment processing network **26** may include a server computer. A "server computer" or "server" is typically a powerful computer or cluster of computers. For example, the server computer can be a large mainframe, a minicomputer cluster, or a group of servers functioning as a unit. In one example, the server computer may be a database server coupled to a Web server. The payment processing network **26** may use any suitable wired or wireless network, including the Internet.

[0034] The merchant **22** may also have, or may receive communications from, an access device **34** that can interact with the portable consumer device **32**. In FIG.

1(a), the access device **34** is located at the merchant **22**. However, it could be located at any other suitable location in other embodiments of the invention.

[0035] The access devices according to embodiments of the invention can be in any suitable form. Examples of access devices include point of sale (POS) devices, cellular or mobile phones, PDAs, personal computers (PCs), tablet PCs, handheld specialized readers, set-top boxes, electronic cash registers (ECRs), automated teller machines (ATMs), virtual cash registers (VCRs), kiosks, security systems, access systems, and the like.

[0036] If the access device **34** is a point of sale terminal, any suitable point of sale terminal may include a reader **34(a)**, a processor **34(b)** and a computer readable medium **34(c)**. The reader **34(a)** may include any suitable contact or contactless mode of operation. For example, exemplary card readers can include RF (radio frequency) antennas, magnetic stripe readers, etc. to interact with the portable consumer device **32**.

[0037] In a typical purchase transaction, the consumer **30** purchases a good or service at the merchant **22** using a portable consumer device **32** such as a credit card. The consumer's portable consumer device **32** can interact with an access device **34** such as a POS (point of sale) terminal at the merchant **22**. For example, the consumer **30** may take a credit card and may swipe it through an appropriate slot in the POS terminal. Alternatively, the POS terminal may be a contactless reader, and the portable consumer device **32** may be a contactless device such as a contactless card.

[0038] An authorization request message is then forwarded to the acquirer **24**. After receiving the authorization request message, the authorization request message is then sent to the payment processing network **26**. The payment processing network **26** then forwards the authorization request message to the issuer **28** of the portable consumer device **32**.

[0039] After the issuer **28** receives the authorization request message, the issuer **28** sends an authorization response message back to the payment processing network **26** to indicate whether or not the current transaction is authorized. The payment processing network **26** then forwards the authorization response message

back to the acquirer **24**. The acquirer **24** then sends the response message back to the merchant **22**.

[0040] After the merchant **22** receives the authorization response message, the access device **34** at the merchant **22** may then provide the authorization response message for the consumer **30**. The response message may be displayed by the access device **34** or the portable consumer device **32**, or may be printed out on a receipt.

[0041] At the end of the day, a normal clearing and settlement process can be conducted by the payment processing network **26**. A clearing process is a process of exchanging financial details between an acquirer and an issuer to facilitate posting to a consumer's account and reconciliation of the consumer's settlement position.

[0042] Some of the embodiments described below may use a payment processing system like the one described above, or any suitable combination of components in the payment processing system.

[0043] II. Customized Payment Transaction Notification System and Method

[0044] Embodiments of the invention are directed to customized alerts and notifications for portable consumer device transactions. In these embodiments of the invention, a consumer may customize the alert trigger (e.g., only notify the consumer if the transaction that is occurring is greater than \$5000 in value), time of the alert (e.g., from 9 a.m. to 5 p.m.), communication mode (e.g., e-mail, telephone, SMS), and/or contact (e.g., wireless e-mail address, work e-mail address, spouse's cellular phone, home phone). The consumer may use an interface such as a Web interface to indicate how and/or when the consumer is to be alerted when the consumer's portable consumer device or account number associated with the portable consumer device is used. In embodiments of the invention, the consumer can specify whether he wants alerts set separately for each account number and/or portable consumer device that he has. He can also specify that any alerts that are provided by provided at the same time and under the same conditions across all accounts or portable consumer devices associated with the consumer.

[0045] Illustratively, the consumer can visit a Web site which allows the consumer to customize the way in which he is alerted when his credit card is being used. Using a Web interface such as a Web page, the consumer may indicate that he wants to be notified by phone if his credit card or credit card account number is being used between 10 p.m. and 6 a.m. to conduct a transaction of any amount, since he will most likely be at home and sleeping during this time. Using the Web page, the consumer may also specify that the consumer wants to be notified of any account or device activity via e-mail and a mobile phone during the hour of 6:00 a.m. and 10 p.m, only if the transaction amount is greater than \$500. Thus, after the consumer provides this customization information, if a \$5000 credit card transaction is conducted at 2 a.m. using the consumer's credit card, a payment processing organization and/or issuer may then provide an alert to the consumer by calling the consumer on the consumer's home telephone. The consumer may thereafter contact the payment processing organization and/or the issuer to take appropriate action. For example, the consumer may prevent the transaction from taking place by not authorizing the transaction. Alternatively, if a \$5000 transaction is being conducted at 10 a.m. using the consumer's credit card or credit card account number, the payment processing organization and/or the issuer of the credit card may notify the consumer by providing an alert to his e-mail device and his mobile phone.

[0046] FIG. 2 shows a block diagram of a system according to an embodiment of the invention.

[0047] FIG. 2 shows a consumer **205** who may use a portable consumer device **200** to conduct payment transactions, money transfers, access transactions, etc. The consumer **205** may also use a notification device **290** such as a mobile phone to receive alerts, and may use a client computer **207** such as a personal computer to receive alerts and/or to enroll in an alert program. As shown in FIG. 2, the client computer **207** may be in operative communication with a Web enrollment server **215**, which may in turn be in operative communication in an enrollment application server **220**, a SQL database server **230**, and a notification server **250**. An issuer **210** may be in communication with at least the enrollment application server **220**, and the payment processing network **240** may be in communication with the notification server **250**. An aggregator **280** may be in communication with a

gateway **260** and the notification device **290**, as well as the notification server **250**. Each of the components shown in FIG. 2 is described in further detail below. Methods of using the system shown in FIG. 2 are also described in detail below.

[0048] For simplicity of illustration, one portable consumer device, one consumer, one issuer, one notification device, one client computer, one aggregator, etc. is shown. It is understood however, that embodiments of the invention may include multiple portable consumer devices, consumers, issuers, notification devices, client computers, aggregators, etc. In addition, some embodiments of the invention may include fewer than all of the components shown in FIG. 2. Also, the components in FIG. 2 may communicate via any suitable communication medium (including the Internet), using any suitable communication protocol.

[0049] The system in FIG. 2 includes a portable consumer device **200** associated with a consumer **205**. Suitable portable consumer devices are described in further detail above.

[0050] The consumer **205** may operate a client computer **207**. The client computer **207** can be a desktop computer, a laptop computer, a cellular or mobile phone, a personal digital assistant (PDA), etc. It may operate using any suitable operating system including a Windows™ based operating system.

[0051] The notification device **290** can be any suitable device that can receive alerts and can provide such alerts to the consumer **205**. Examples of notification devices include computers, cellular or mobile phones (e.g., as shown in FIG. 1(b)), wired telephones, personal digital assistants (PDAs), pagers, and the like. The notification device **290** may be in any suitable form (e.g., suitable notification devices can be hand-held and compact so that they can fit into a consumer's wallet and/or pocket).

[0052] In some embodiments, the notification device **290** and the portable consumer device **200** can be embodied by the same device. For example, a wireless phone may function as both a portable consumer device that can be used to pay for goods or services, and a notification device to notify the consumer if activity associated with the wireless phone, or an account number associated with the wireless phone, is being conducted.

[0053] If the notification device is a phone, it may comprise a processor, and a computer readable medium coupled to the processor. The computer readable medium comprises code for receiving an alert, wherein the alert indicates that the transaction is occurring, where the alert is sent to the consumer according to a time or communication mode previously specified by the consumer using an interface that allows the consumer to specify the time and communication mode for receiving the alert.

[0054] As described above, the issuer **210** may be a bank or other business entity such as a retail store. The payment processing network **240** may include data processing subsystems, networks, and operations used to support and deliver authorization services, exception file services, and clearing and settlement services. An exemplary payment processing network may include VisaNet™.

[0055] A web enrollment server **215**, an enrollment application server **220**, a SQL DB server **230**, and a notification server **250** may perform different functions. For example, a web enrollment server **215** may receive enrollment or registration information from a consumer **205** via a client computer **207** and send enrollment information to an enrollment application server **220**. An enrollment application server **220** may receive enrollment information from a consumer **205** through a web enrollment server **215** or an issuer **210** and may store the new or updated enrollment information in a SQL DB server **230**. A SQL DB server **230** may receive and store new or updated enrollment information (e.g., information on what types of alerts the consumer would like to receive, etc.) as well as other consumer account information such as whether or not an alert has been received by a consumer and whether or not the consumer would like the alert to be escalated if it has not been received. A notification server **250** may receive alert trigger information, determine whether the consumer **205** would like to be notified about the trigger, and send alerts to a notification device **290** via a gateway **260** and aggregator **280** if the consumer **205** would like to receive an alert for the trigger. A notification event server **250** may also evaluate whether or not the alert should be escalated.

[0056] The system in FIG. 2 may further include a gateway **260** whereby a phone call, text message or Short Message Service ("SMS") message, for example, from the notification server **250**, can pass through to the consumer via aggregator

280. (SMS is typically a service available on a portable consumer device that permits the sending of short messages between devices via an intermediate server.) The gateway **260** may be embodied by a computer or a network that allows or controls access to another computer or network. The gateway **260** may also be a software interface between the computer or network and another computer or network.

[0057] The aggregator **280** may be an entity or organization that receives and transmits messages to a phone, e-mail account, etc. In some cases, wireless telephone companies may be considered aggregators.

[0058] Before a consumer can receive alerts, the consumer can register with the alert system. Information can be received using an interface that allows the user to specify the time and communication mode for receiving an alert when a transaction is occurring with respect to a portable consumer device associated with the consumer. The information includes the communication mode or time in which the consumer wants to be notified.

[0059] A specific registration process can now be described with reference to FIG. 2. A consumer **205** may register for alerts or update existing alerts for transactions made with the portable consumer device **200** in any number of ways. For example, the consumer **205** can register via a separate website designed for this purpose, or manually through a paper form (which may be considered a registration interface). Registration information may be received by the issuer **210**, the payment processing organization operating the payment processing network **240**, or another third party.

[0060] The issuer **210** or payment processing organization may also enroll the consumer **205** automatically for alerts and notifications. For example, if the consumer **205** is automatically enrolled by the issuer **210** or provides enrollment information to an issuer **210** associated with the portable consumer device **200**, then the issuer **210** may communicate with an enrollment application server **220** and may send the consumer's enrollment information to the enrollment application server **220**. In some cases, a consumer **205** may enroll for alerts (or update existing information) for a portable consumer device **200** (e.g., a credit card or debit card) by providing information (e.g., alert trigger, time, communication mode, and/or contact for

notification) to the issuer **210** (e.g., the bank that issued the consumer's credit card) in person, via a website, over the phone, or by mail. The alerts may be set by account (e.g., separate alerts for each account and/or portable consumer device the consumer has with the issuer) or may be set by identification so that all accounts for that consumer have the same alerts.

[0061] A consumer **205** may also register to receive alerts via a website (separate from the issuer) designed for this purpose, by entering enrollment information (or updating existing information) for a portable consumer device **200**. For example, a consumer **205** may use a client computer **207** to access the website to enter registration information. The information is then sent to a web enrollment server **215**, which sends the information to the enrollment application server **220**.

[0062] The client computer **207** may comprise a processor, and a computer readable medium. The computer readable medium comprises instructions for executing a method comprising receiving information on how to be notified if a predetermined activity is occurring with respect to a portable consumer device, wherein an alert is provided in manner consistent with the information provided if the predetermined activity is occurring wherein the information provided is a result of the consumer's choice to customize an alert for each predetermined activity by using an interface that allows a user to customize the alert according to at least communication mode and time, and sending the information to a notification server.

[0063] An exemplary Web interface is shown in FIG. 4. As shown, a consumer having a portable consumer device **200** with an account number 12345678 may indicate, for each communication mode (which may include different types of electronic devices), the particular time or times that the user wants to be alerted. FIG. 4 also shows thresholds (e.g., triggers) that will trigger the sending of an alert. As shown in FIG. 4, different triggers can be matched with different times, and different alert modes. In the illustrated example, a consumer may want to be notified when any transaction is conducted between 10:01 pm and 6:59 am, since he will probably not be conducting transactions during this time. However, during other times, the consumer may only want to be alerted if transactions are over \$100.

[0064] The enrollment application server **220** may then store the new or updated enrollment information in a SQL DB server **230**. The SQL DB server may

be updated immediately after the enrollment application server **220** receives new or updated information, or periodically (e.g., every hour, at the end of the day, etc.).

[0065] The alert trigger records are then sent to the system which will be detecting the trigger for the alert so that the system knows under what conditions the consumer **205** would like an alert. These trigger records may be sent on demand (e.g., when the consumer **205** makes a change) or periodically (e.g., hourly, daily, etc.). In one embodiment, the system detecting the alert may be a payment processing network **240**. In another embodiment the system detecting the alert may be an issuer **210**.

[0066] In some embodiments, alerts may be sent after other certain conditions are met. For example, the conditions associated with a particular purchase transaction may first be evaluated by a payment processing organization or issuer to determine if an alert is to be sent. For example, a payment processing organization or issuer may determine that the particular transaction being evaluated is a mail order-telephone order type of purchase (i.e., a MOTO transaction), is a risky transaction (e.g., because the transaction is being conducted by a merchant who has had risk issues in the past), and/or is over a certain dollar limit (e.g., over \$30 in value). In such embodiments, it may be that the alert is only sent if these conditions are met. Such conditions may be set by the payment processing organization or the issuer, with or without the participation or knowledge of the consumer.

[0067] FIG. 3 shows a flowchart including a general method according to an embodiment of the invention. The method can be described with reference to the block diagram in FIG. 2.

[0068] In a typical transaction a consumer **205** may use the portable consumer device **200** to make a purchase via a payment processing network **240**. For example, the consumer **205** may use a portable consumer device (step **300**), such as a credit card, to pay \$5000 for a flat screen television. Once the consumer **205** uses the portable consumer device **200** (e.g., swipes his credit card at a merchant as shown in FIG. 1(a) and described earlier), an authorization request message passes to the payment processing network **240**. The payment processing network **240** checks to see if the characteristics of the transaction that has been

made with the portable consumer device **200** matches a condition (e.g., notification event trigger) under which a consumer wants to be alerted (step **310**).

[0069] There are a number of examples of notification event triggers. Examples of notification event triggers include the following: a transaction is over a certain amount of money (e.g. over \$5000); any transaction conducted with a particular portable consumer device; a spending threshold (e.g., a daily or monthly spending limit) has been reached for a particular portable consumer device; a transaction is made outside a particular geographic location (e.g., outside the country that the consumer resides in); a risky transaction is being conducted ("risky" may be predefined by the consumer and/or the issuer), a transaction is made without the physical portable consumer device (e.g., Internet, mail, or telephone order); a cash transaction or withdrawal; an online account has been accessed; a person has used the portable consumer device to enter a certain location (e.g., a secure area, a business after-hours); a payment is due within a certain amount of time; a payment is overdue; a child or spouse has conducted a transaction; a balance on the portable consumer device is exceeded; a particular type of transaction is being conducted (e.g., purchases for airline tickets, lodging, auto rental, restaurants, medical, etc.), etc. Thus, embodiments of the invention are flexible enough to allow for many types of notification event triggers.

[0070] If there is no notification event trigger, then the notification process ends (step **315**). If there is a notification event trigger, the payment processing network **240** sends the trigger information to the notification server **250**. The notification server **250** checks the SQL DB Server **230** to see how (or even if) the consumer **205** would like to be notified about the credit card transaction (step **320**). If the consumer **205** does not want to be alerted about this particular type of transaction, the notification process ends (step **325**).

[0071] If the consumer **205** would like to be notified about this particular type of transaction, then an alert is then sent to the consumer **205** via the communication mode (e.g., via a specific communication channel) specified by the consumer **205** (step **330**). Examples of communication modes include voice, mobile, SMS, e-mail, instant message, IVR (interactive voice response). etc.

[0072] As noted above, consumer may specify one or more communication mode per notification event trigger. For example, a consumer may want to be notified when a purchase is made that is over \$5000 by mobile phone and e-mail. In addition, a consumer may specify one or more contacts for each communication mode. For example, a consumer **205** can have multiple mobile numbers (e.g., the consumer's personal mobile phone, work mobile phone, spouse's mobile phone number), multiple phone numbers (e.g., home phone, work phone), multiple SMS addresses (e.g., mobile phone, PDA, secretary's PDA), or multiple e-mail addresses (e.g., work e-mail, personal e-mail), etc. A consumer may also customize the time that he wants to receive each or all alerts. For example, the consumer may want to be notified immediately of the transaction, only during certain hours (e.g., between 9 a.m. and 5 p.m.), may specify different communication modes for different times of the day or types of transactions, or may choose not to be notified during certain hours (e.g., between 1 a.m. and 6 a.m.).

[0073] Thus, a consumer can specify that he wants to receive a notification if his portable consumer device is used for a transaction over a certain amount of money (e.g., over \$5000), via his work phone number and spouse's e-mail if it is during the day, and by SMS and home phone if the transaction occurs on the evening or weekend. The alert may be sent to a notification device **290** via a gateway **260** and aggregator **280** using the specified communication mode. The alert text or message may also be customized to the consumer, such as, "Mark, your credit card account ending in 9999 was just used for a purchase by phone for \$500.00. Please contact 555-555-5555 if this is incorrect."

[0074] A consumer may also want the alert to be escalated if the alert was not received. An alert may not be received if it could not be delivered (e.g., the mobile phone network was down, the consumer's number has been de-listed), or the consumer does not acknowledge the alert message within a certain time (e.g., respond to the message, listen to the voicemail, open the SMS message or e-mail). A status message regarding whether or not a consumer has received the alert is sent to the notification server **250** via aggregator **280** and gateway **260**, and is stored in the SQL DB Server **230**. The notification server **250** evaluates whether or not the alert should be escalated (e.g., whether the alert was received and whether the consumer has specified that he wants the alert to be escalated). If the alert was not

received, then the notification server **250** can retry the same communication mode or try a different communication mode based on the consumer preference or default settings. For example, a consumer may have an alert set for a purchase made out of the country in which he resides. He may want the alert be sent to his PDA that he generally carries with him. However, if he does not receive the message on his PDA either because the PDA service is down or he does not have it with him, he can specify that the alert then be sent to a different contact or to each of his other contacts until the system knows that he has received the alert.

[0075] The system may also include timers to send status messages so that the consumer **205** knows whether or not the portable consumer device has been used for a transaction. For example, a consumer **205** may want a timer that alerts him daily at 7 a.m. that he used portable consumer device **200** twice the day before or for certain types of purchases made with the portable consumer device **200**.

[0076] Further, the consumer **205** may want to be alerted if the portable consumer device **200** is used to access a certain location. This can be characterized as an access transaction. For example, a portable consumer device **200** can be an access device to gain entrance to a building or other location. An employee may enter a particular business after-hours or enter a secure area of that business. The consumer **205** may want to receive an alert that the employee has used the portable consumer device **200** to enter the secure area. For example, if Joe Employee enters the secure server room after business hours, the consumer **205** may receive an SMS message on his mobile phone that says "Joe Employee has entered secure area A (the server room)."

[0077] Embodiments of this invention have a number of advantages. First, a consumer can completely customize how, when, and if he wants an alert for some or all transactions made with the portable consumer device, and thus has complete control over the notifications for his portable consumer device. This also allows a better chance of detecting a potentially fraudulent act because the consumer will likely receive the alert in a timely manner so that he can respond to the alert if necessary. Also, there is a better chance at stopping back to back fraudulent acts since the consumer can react quickly to the alert. Further, the consumer can track access of secure areas or general employee activity of using the portable consumer

device. The consumer can also track activity of a child or spouse using the portable consumer device. Finally, the consumer is assured of receiving the alert through the escalation process if he does not receive the alert on the first communication mode or contact it is sent to.

[0078] It should be understood that the present invention as described above can be implemented in the form of control logic using computer software in a modular or integrated manner. Based on the disclosure and teachings provided herein, a person of ordinary skill in the art will know and appreciate other ways and/or methods to implement the present invention using hardware and a combination of hardware and software.

[0079] Any of the server computers, client computers, and even some portable consumer devices described above may utilize any suitable number of subsystems. Examples of such subsystems or components are shown in FIG. 5. The subsystems shown in FIG. 5 are interconnected via a system bus **775**. Additional subsystems such as a printer **774**, keyboard **778**, fixed disk **779**, monitor **776**, which is coupled to display adapter **782**, and others are shown. Peripherals and input/output (I/O) devices, which couple to I/O controller **771**, can be connected to the computer system by any number of means known in the art, such as serial port **777**. For example, serial port **777** or external interface **781** can be used to connect the computer apparatus to a wide area network such as the Internet, a mouse input device, or a scanner. The interconnection via system bus allows the central processor **773** to communicate with each subsystem and to control the execution of instructions from system memory **772** or the fixed disk **779**, as well as the exchange of information between subsystems. The system memory **772** and/or the fixed disk **779** may embody a computer readable medium.

[0080] Any of the software components or functions described in this application, may be implemented as software code to be executed by a processor using any suitable computer language such as, for example, Java, C++ or Perl using, for example, conventional or object-oriented techniques. The software code may be stored as a series of instructions, or commands on a computer readable medium, such as a random access memory (RAM), a read only memory (ROM), a magnetic medium such as a hard-drive or a floppy disk, or an optical medium such

as a CD-ROM. Any such computer readable medium may reside on or within a single computational apparatus, and may be present on or within different computational apparatuses within a system or network.

[0081] The above description is illustrative and is not restrictive. Many variations of the invention will become apparent to those skilled in the art upon review of the disclosure. The scope of the invention should, therefore, be determined not with reference to the above description, but instead should be determined with reference to the pending claims along with their full scope or equivalents.

[0082] One or more features from any embodiment may be combined with one or more features of any other embodiment without departing from the scope of the invention.

[0083] A recitation of "a", "an" or "the" is intended to mean "one or more" unless specifically indicated to the contrary.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A method comprising:

receiving, at a payment processing network, an authorization request message that includes information to indicate that a transaction associated with a portable consumer device is occurring, wherein the payment processing network is configured to process credit and debit transactions;

determining, using the payment processing network, that an alert should be provided to a consumer associated with the portable consumer device based on the information included in the authorization request message; and

providing, using the payment processing network, an alert to the consumer associated with the portable consumer device, wherein the alert indicates that the transaction is occurring, wherein the alert is sent to the consumer according to a time or communication mode previously specified by the consumer using an interface that allows the consumer to specify the time and communication mode for receiving the alert.

2. The method of claim 1 wherein the alert is sent to the consumer if the transaction that is occurring is over a predetermined amount, the transaction is of a predetermined type, the transaction is made outside a geographic location specified by the consumer, the transaction is determined to be a risky transaction, the transaction being conducted without the portable consumer device being physically present at a point of sale, the transaction is a cash transaction, the transaction is a particular type of user-defined transaction, the transaction involves account access, the transaction indicates that a person is entering or exiting a location, the transaction indicates that a payment is due or overdue, or the transaction indicates that a specified person is conducting the transaction.

3. The method of claim 1 wherein a portable consumer device is in the form of a card, and wherein the alert is sent to a phone operated by the consumer.

4. The method of claim 1 wherein the alert is a first alert, and wherein the second alert is sent to the consumer through another communication mode.

5. The method of claim 1 further comprising:

receiving, via an interface, a user-specified time and communication mode for receiving that alert.

6. The method of claim 1 wherein the communication mode includes using at least one of a phone call, voicemail, SMS, instant message, and an e-mail.

7. The method of claim 1 wherein the consumer previously provided a trigger specifying a condition under which the alert would be sent.

8. The method of claim 1 wherein the information provided includes a date

when a consumer wants to be notified.

9. The method of claim 1 wherein the alert is initiated after conditions set by an issuer or payment processing organization are met.

10. A computer readable medium comprising:
code for receiving an authorization request message that includes information to indicate that a transaction associated with a portable consumer device is occurring;
code for determining that an alert should be provided to a consumer associated with the portable consumer device based on the information included in the authorization request message; and
code for providing an alert to the consumer associated with the portable consumer device, wherein the alert indicates that the transaction is occurring, wherein the alert is sent to the consumer according to a time or communication mode previously specified by the consumer using an interface that allows the consumer to specify the time and communication mode for receiving the alert.

11. The computer readable medium of claim 10 wherein the alert is a first alert, and wherein the computer readable medium further comprises code for sending the second alert to the consumer through another communication mode.

12. The computer readable medium of claim 10 wherein the information is received via a payment processing network, and wherein the payment processing network is configured to process credit and debit card transactions.

13. The computer readable medium of claim 10 wherein the alert is in the form of a phones call.

14. A server computer comprising the computer readable medium of claim 10.

15. The server computer of claim 14 wherein the server computer is in communication with a payment processing network.

16. The server computer of claim 14 wherein the alert is a first alert, and wherein the computer readable medium further comprises code for sending the second alert to the consumer through another communication mode.

17. A client computer comprising a processor, and a computer readable medium, wherein the computer readable medium comprises instructions for executing a method comprising:

receiving information on how to be notified if a predetermined activity is occurring with respect to a portable consumer device, wherein an alert is provided in manner consistent with the information provided if the predetermined activity is occurring wherein the information provided is a result of a consumer's choice to customize an alert for each

predetermined activity by using an interface that allows a user to customize the alert according to at least communication mode and time, and wherein information included in an authorization request message received at a payment processing network indicates that the predetermined activity with respect to the portable consumer device is occurring and wherein the alert is provided based on information included in the authorization request message; and

sending information to a notification server.

18. The client computer of claim 17 further comprising a display coupled to the processor, wherein the display displays an interface showing the consumer customized times, communication modes, and triggers for alerts.

19. The client computer of claim 17 wherein the interface is a Web interface.

20. The client computer of claim 17 wherein the alert is in the form of a phone call.

21. A phone comprising a processor, and a computer readable medium coupled to the processor, wherein the computer readable medium comprises code for receiving an alert, wherein the alert indicates that the transaction is occurring, wherein the alert is sent to the consumer according to a time or communication mode previously specified by the consumer using an interface that allows the consumer to specify the time and communication mode for receiving the alert, and wherein information included in an authorization request message received at a payment processing network indicates that the predetermine activity with respect to the portable consumer device is occurring and wherein the alert is provided based on information included in the authorization request message.

22. A method substantially as hereinbefore described with reference to any one of the embodiments as that embodiment is shown in the accompanying drawings.

Dated 11 May, 2012

Visa U.S.A. Inc.

Patent Attorneys for the Applicant/Nominated Person

SPRUSON & FERGUSON

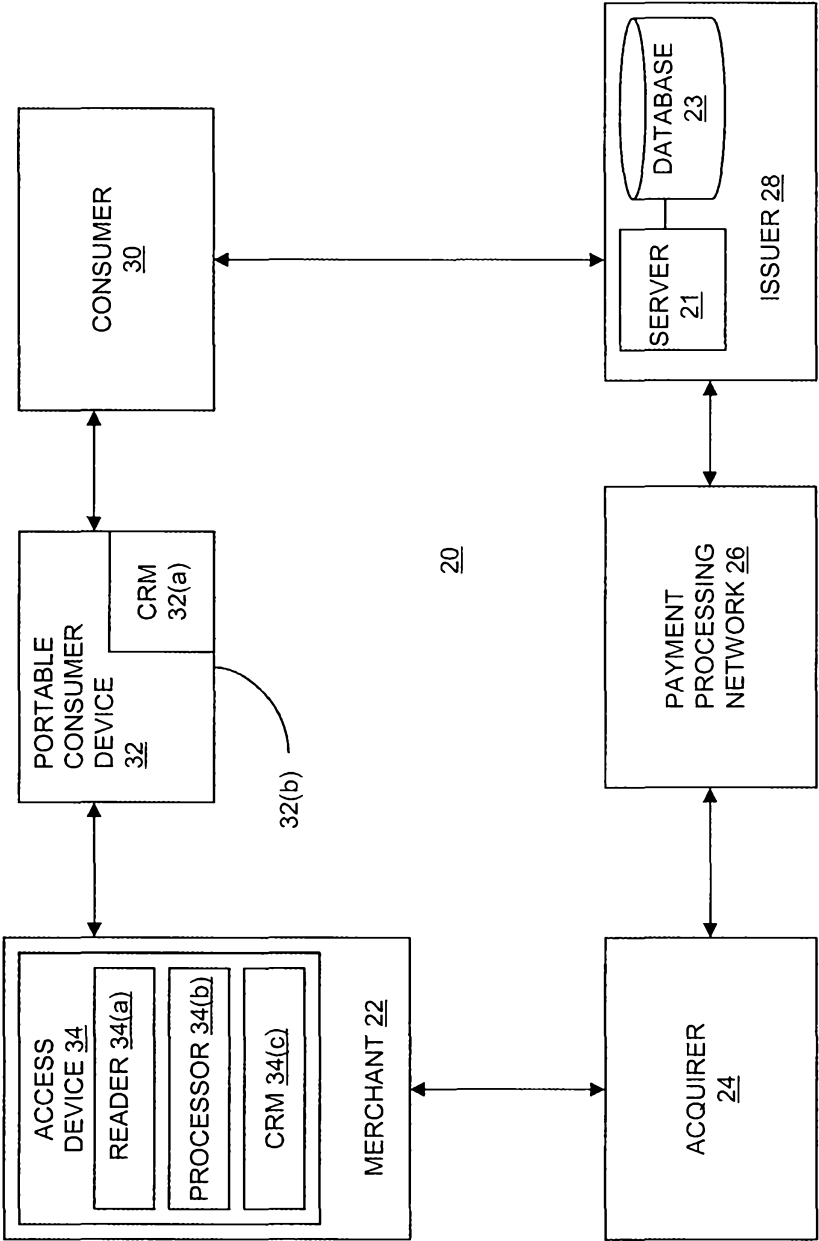


FIG. 1(a)

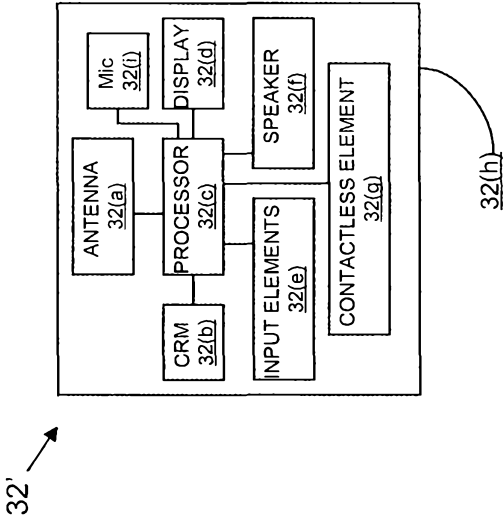


FIG. 1(b)

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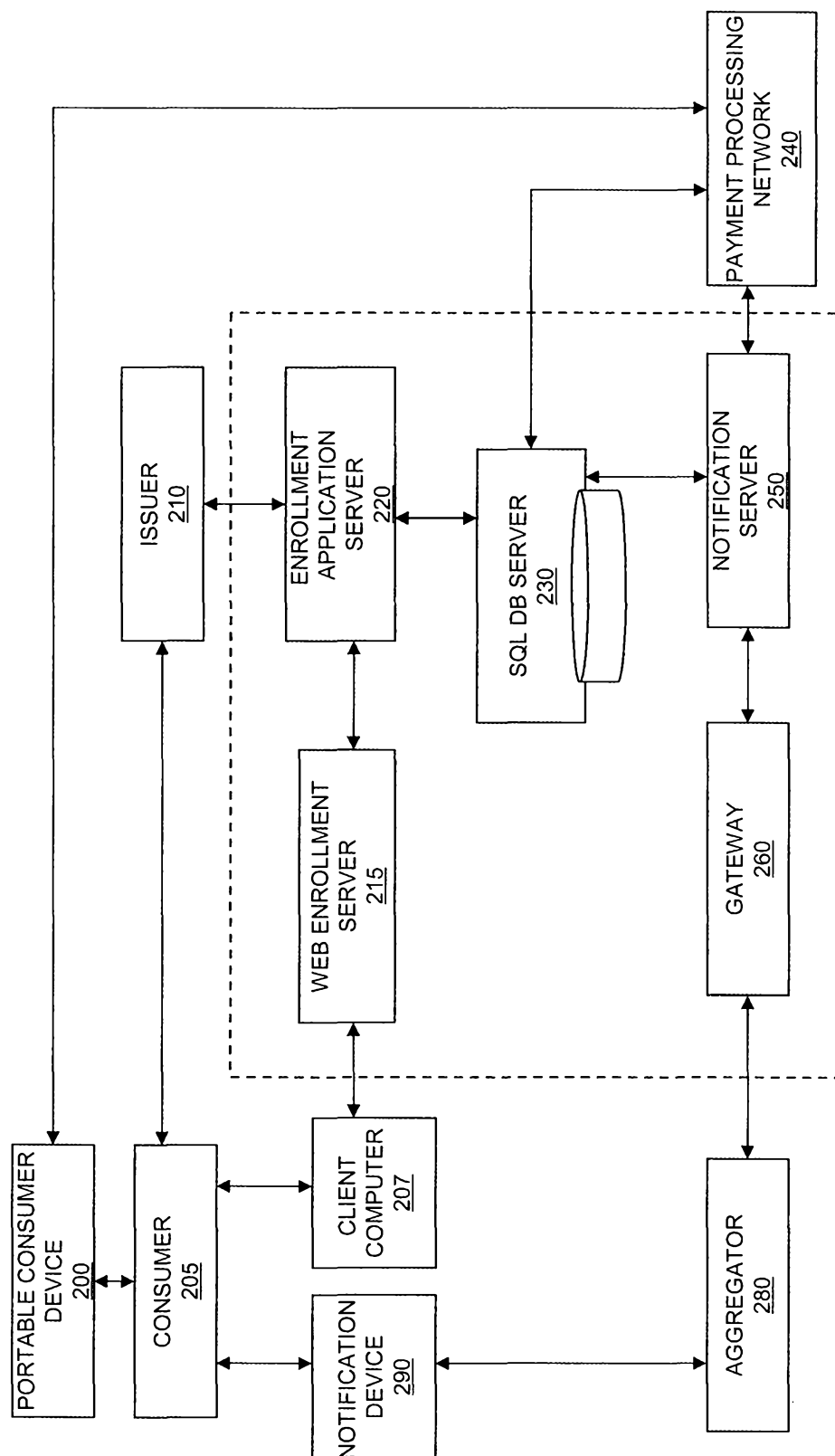


FIG. 2

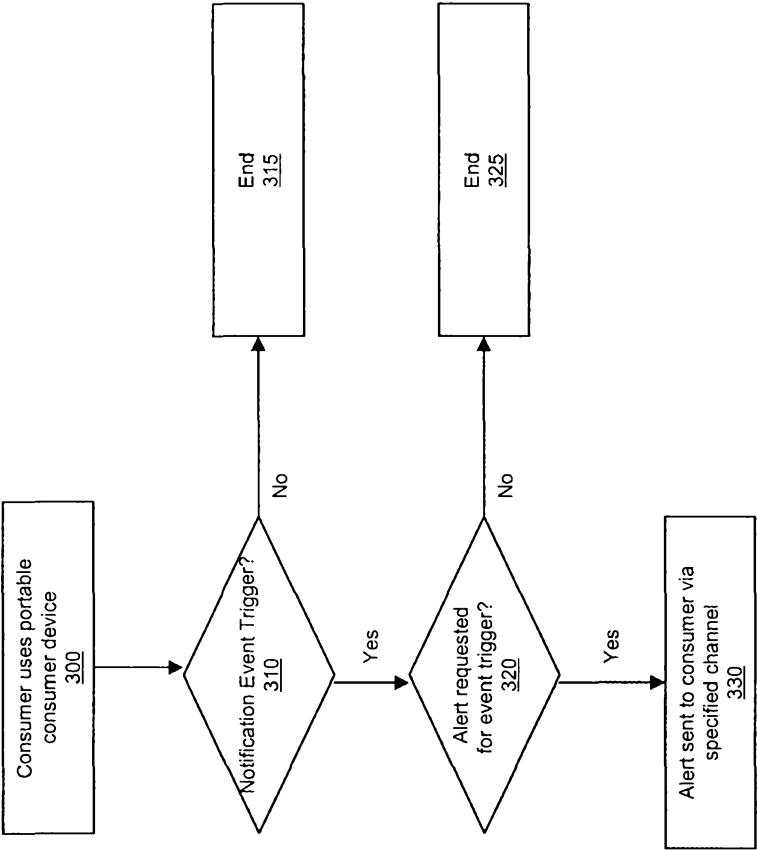


FIG. 3

Customized Notification Page

Account Number: 12345678

<u>Alert Mode</u>	<u>Alert times</u>	<u>Alert trigger</u>
Cell Phone 415-555-5555	7 am to 10 pm	Over \$100
Home Phone 415-555-5555	10:01 pm to 6:59 am	Any amount
Mobile e-mail device	All day	Over \$100

FIG. 4

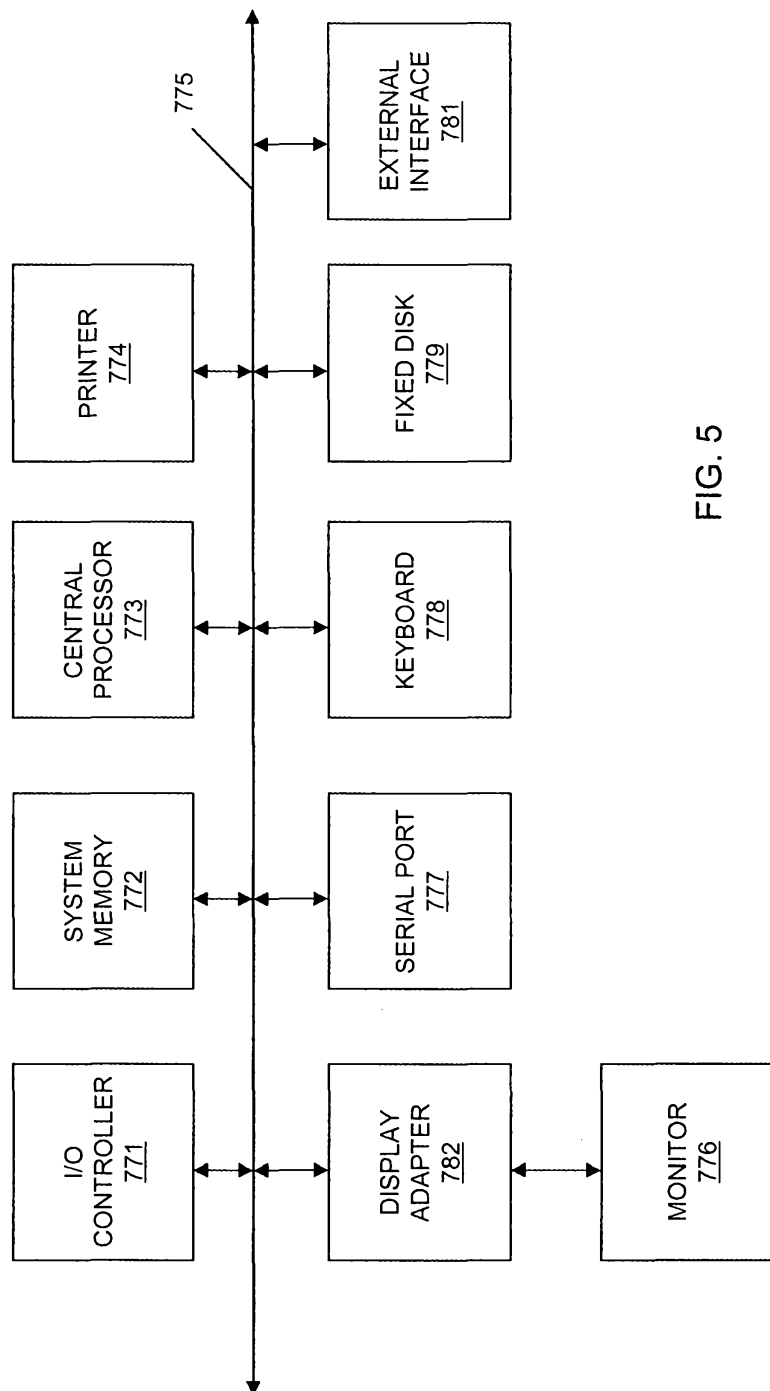


FIG. 5