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(54) **QUICK TRANSACTION COMPLETION USING MOBILE DEVICE**

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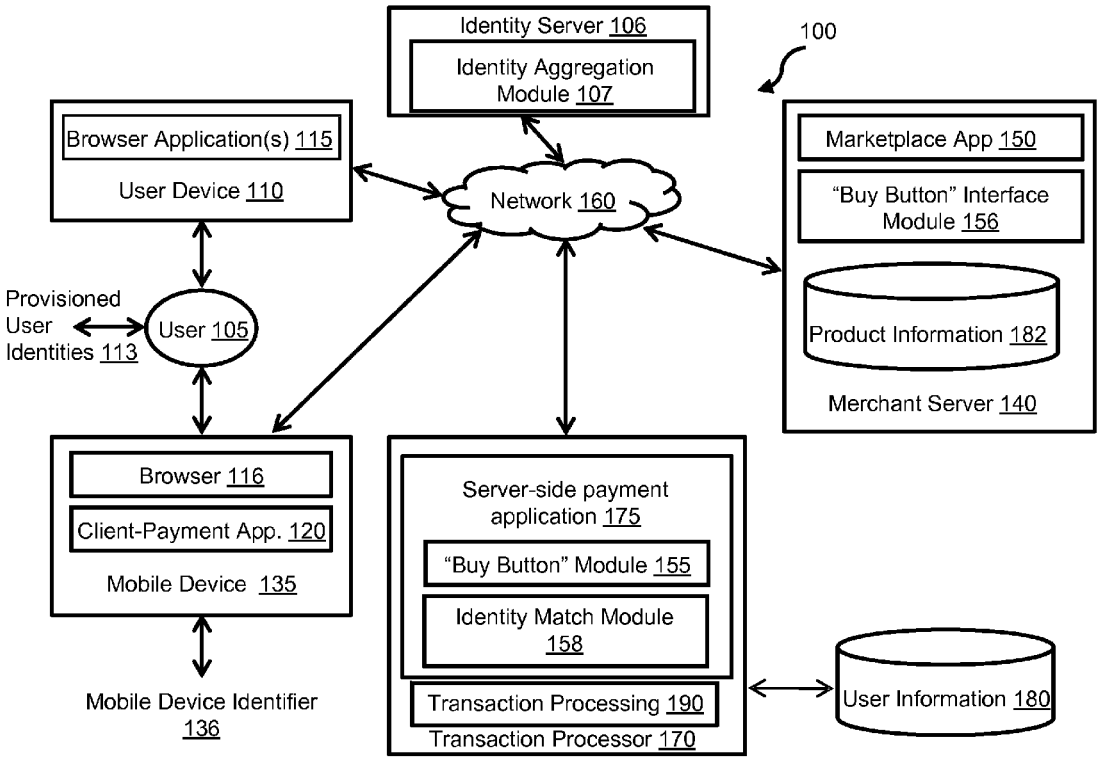
USPC **705/14.64**; 705/44

(57) **ABSTRACT**

Upon receiving an indication that a user wishes to conduct a financial transaction with an online retailer, the user's identity is determined. Instead of requiring the user to create and log into an account with the online retailer, the user's identity may be determined from an identity framework generated for the user from at least one of a plurality of sessions the user is in. A mobile device identifier, such as a mobile phone number associated with the user's identity framework is then retrieved. The mobile device identifier is then used to complete the financial transaction, providing a measure of security. A one-step or two-step request is transmitted to the mobile device having the associated mobile device identifier to authorize the financial transaction. Upon receiving authorization from the mobile device for the financial transaction, the financial transaction can then be enabled.



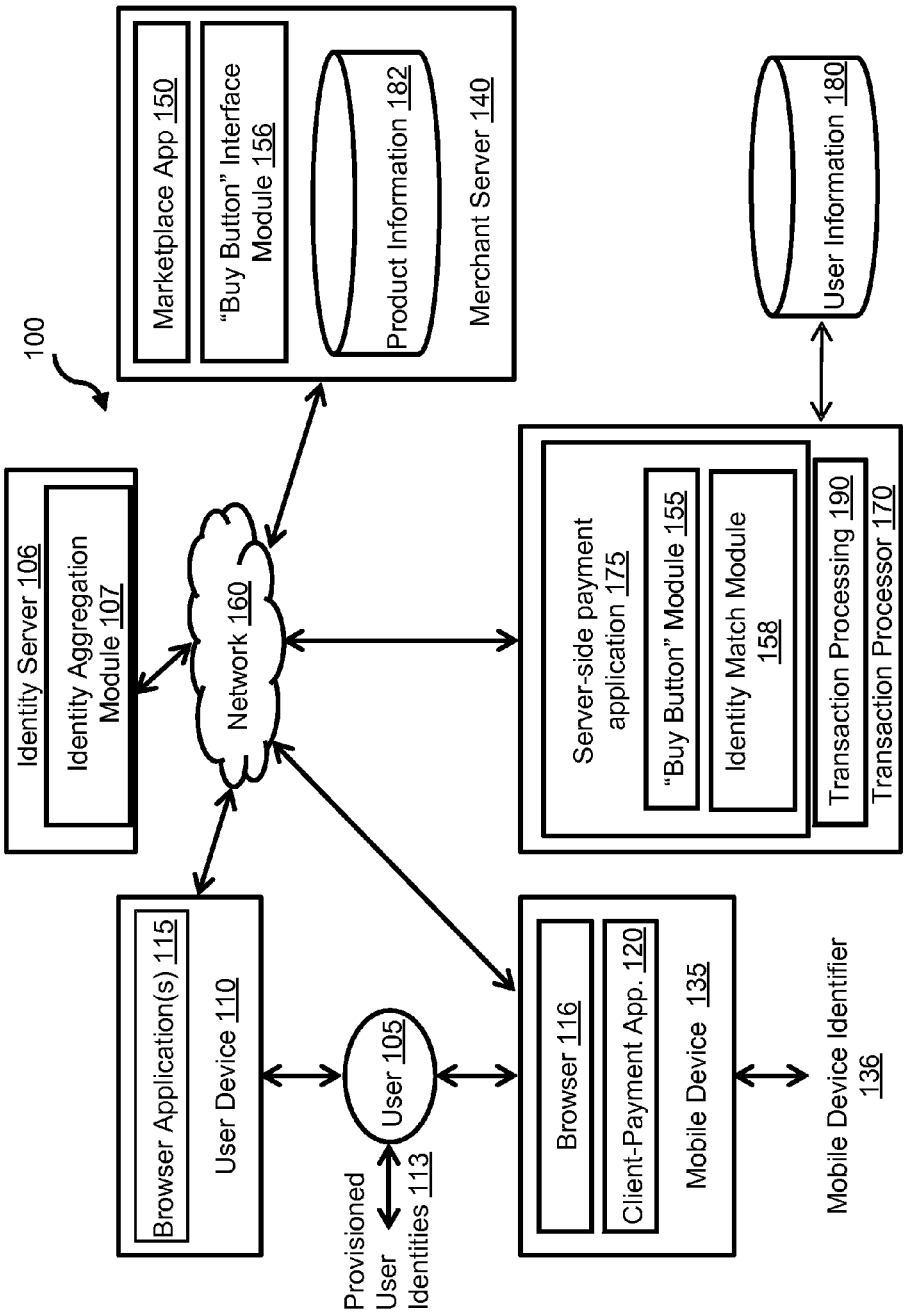

100
Marketplace App 150
"Buy Button" Interface Module 156
Product Information 182
Merchant Server 140
User Information 180
Identity Server 106
Identity Aggregation Module 107
Network 160
Server-side payment application 175
"Buy Button" Module 155
Identity Match Module 158
Transaction Processing 190
Transaction Processor 170
Browser Application(s) 115
User Device 110
User 105
Provisioned User Identities 113
Browser 116
Client-Payment App. 120
Mobile Device 135
Mobile Device Identifier 136

FIG. 1A

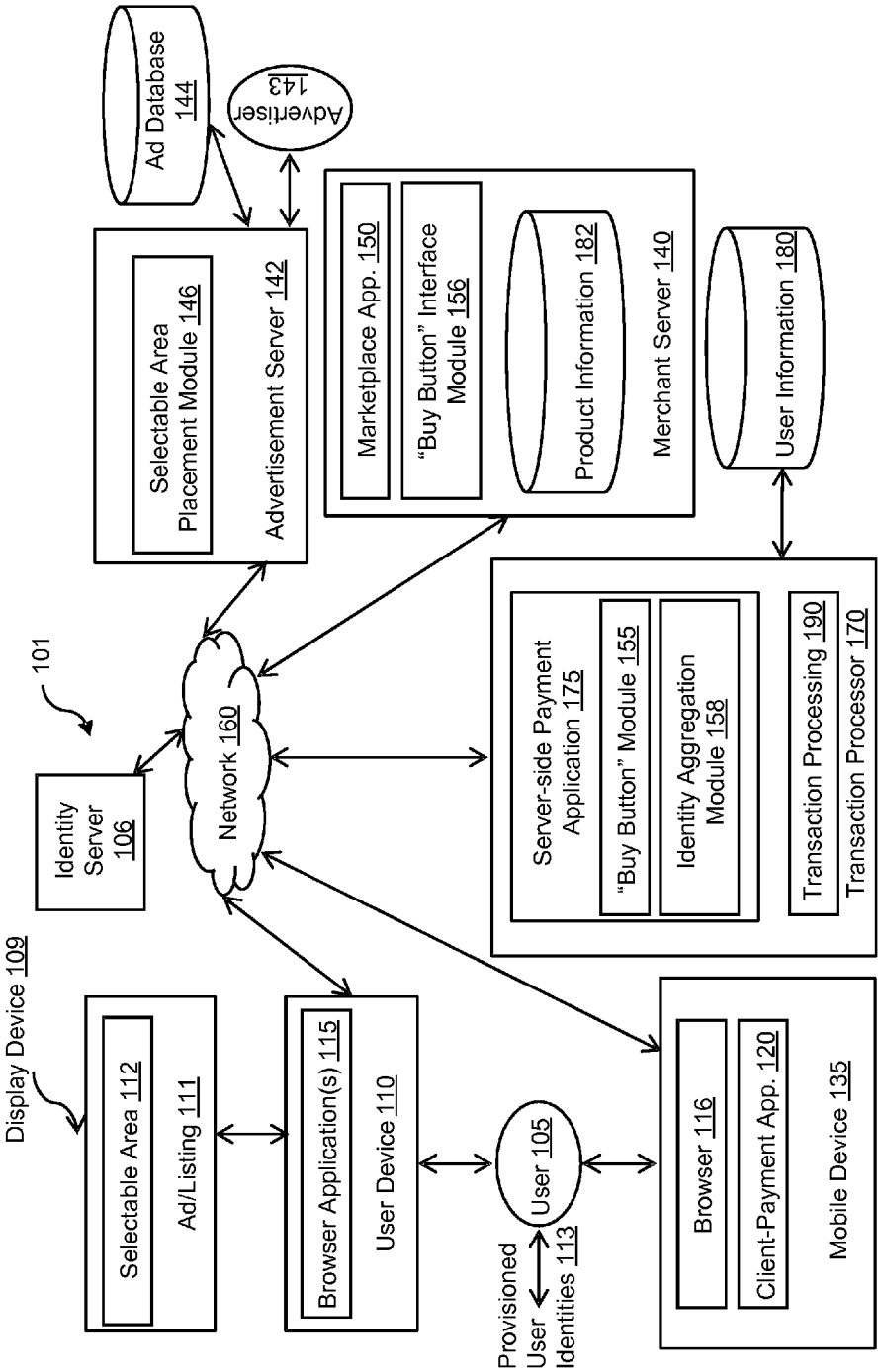

Ad Database 144
Advertiser 143
Selectable Area Placement Module 146
Advertisement Server 142
Marketplace App. 150
"Buy Button" Interface Module 156
Product Information 182
Merchant Server 140
User Information 180
101
Identity Server 106
Network 160
Server-side Payment Application 175
"Buy Button" Module 155
Identity Aggregation Module 158
Transaction Processing 190
Transaction Processor 170
Display Device 109
Selectable Area 112
Ad/Listing 111
Browser Application(s) 115
User Device 110
User 105
Provisioned User Identities 113
Browser 116
Client-Payment App. 120
Mobile Device 135

FIG. 1B

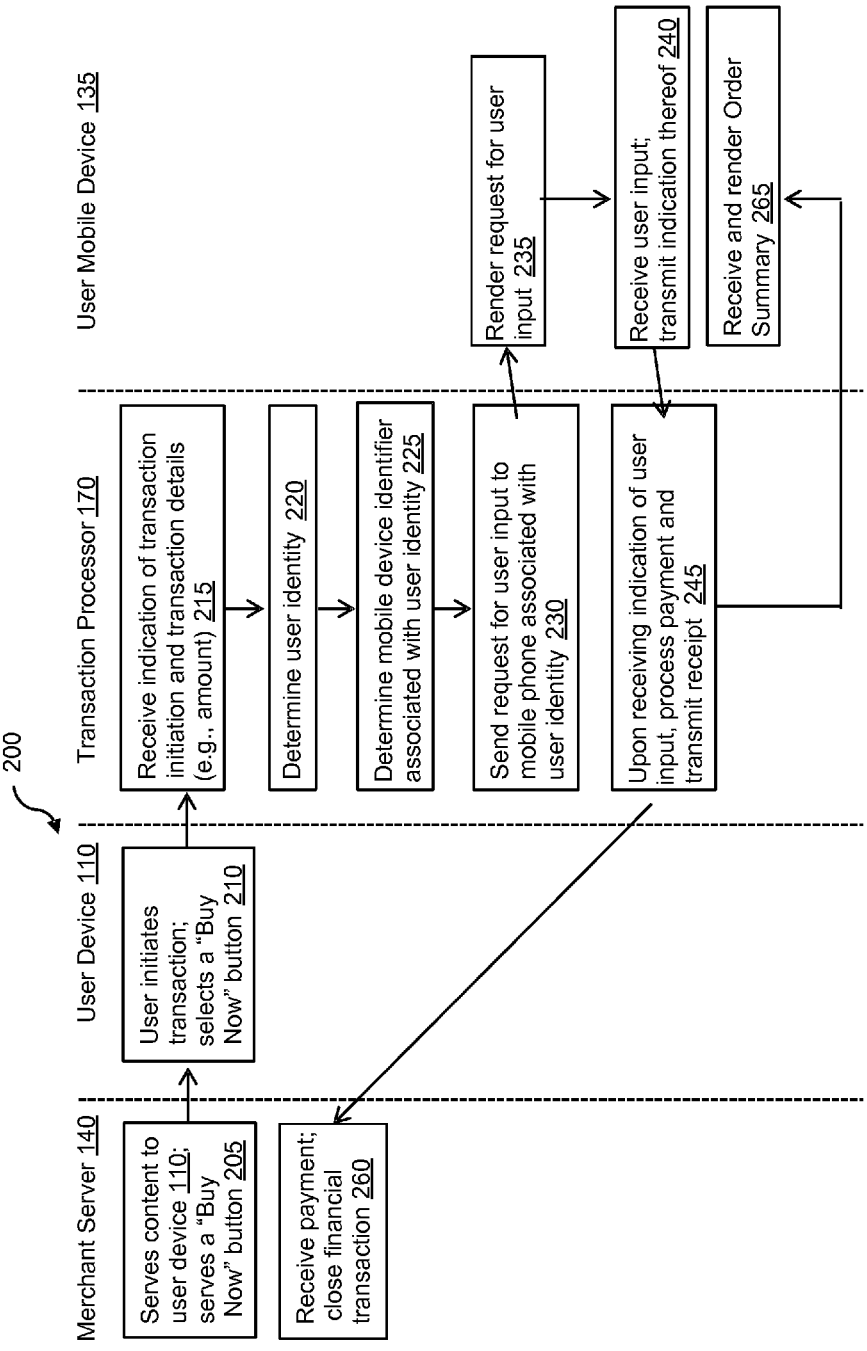

200
Merchant Server 140
User Device 110
Transaction Processor 170
User Mobile Device 135
Serves content to user device 110; serves a "Buy Now" button 205
User initiates transaction; selects a "Buy Now" button 210
Receive indication of transaction initiation and transaction details (e.g., amount) 215
Determine user identity 220
Determine mobile device identifier associated with user identity 225
Send request for user input to mobile phone associated with user identity 230
Render request for user input 235
Receive user input; transmit indication thereof 240
Upon receiving indication of user input, process payment and transmit receipt 245
Receive payment; close financial transaction 260
Receive and render Order Summary 265

FIG. 2A

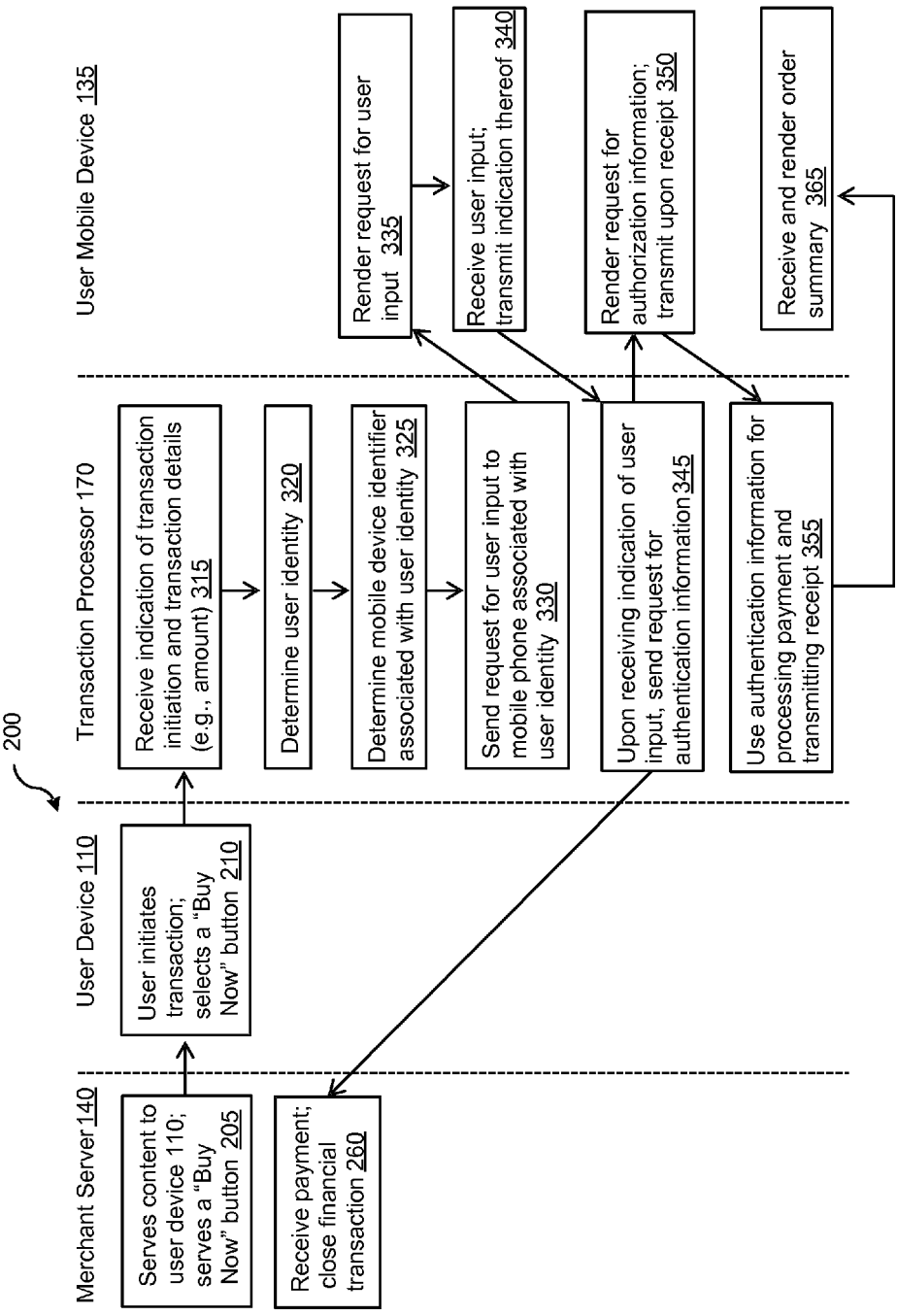

200
Merchant Server 140
User Device 110
Transaction Processor 170
User Mobile Device 135
Serves content to user device 110; serves a "Buy Now" button 205
User initiates transaction; selects a "Buy Now" button 210
Receive indication of transaction initiation and transaction details (e.g., amount) 315
Determine user identity 320
Determine mobile device identifier associated with user identity 325
Send request for user input to mobile phone associated with user identity 330
Render request for user input 335
Receive user input; transmit indication thereof 340
Upon receiving indication of user input, send request for authentication information 345
Render request for authorization information; transmit upon receipt 350
Use authentication information for processing payment and transmitting receipt 355
Receive and render order summary 365
Receive payment; close financial transaction 260

FIG. 2B

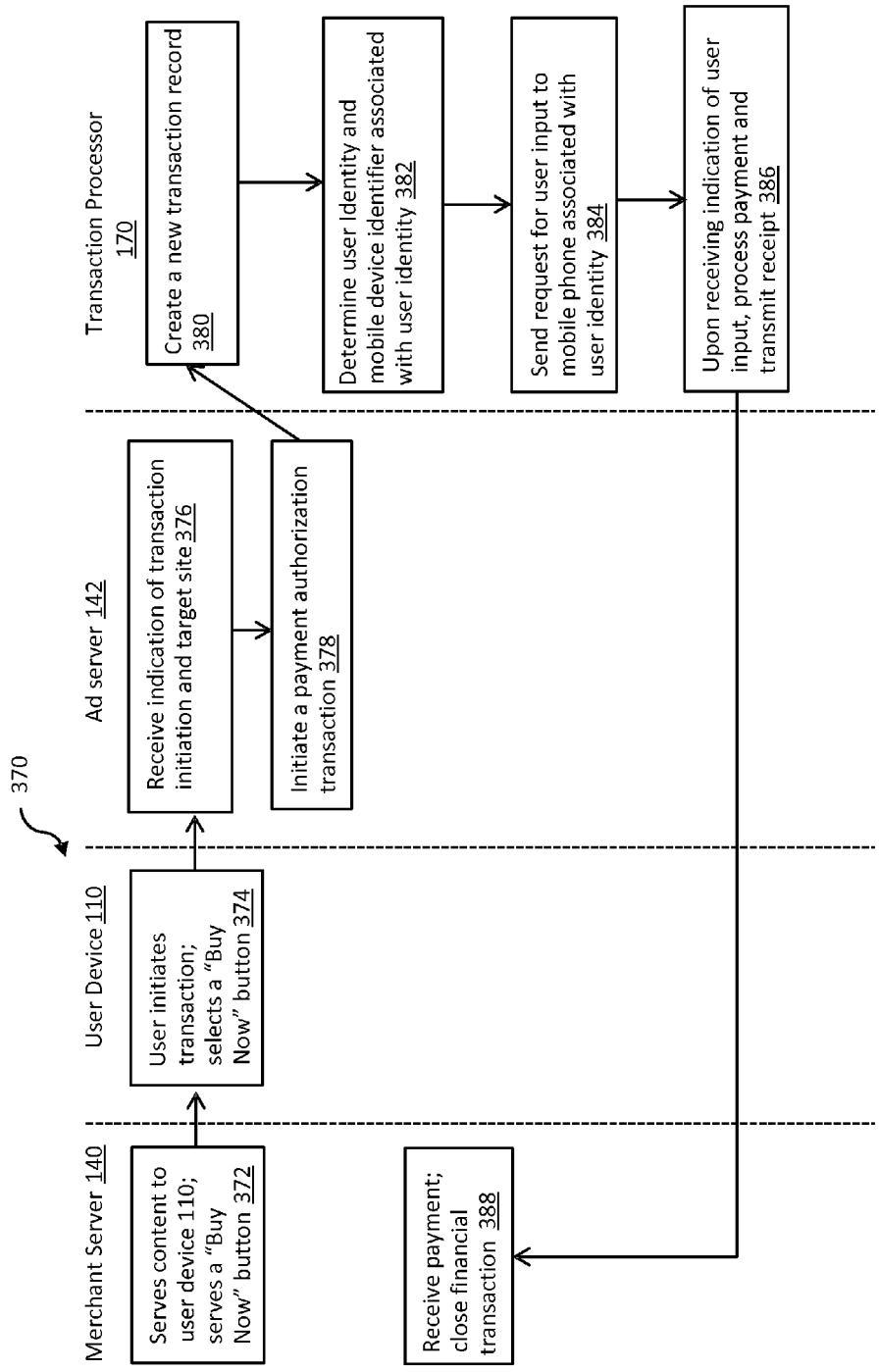

370
Merchant Server 140
User Device 110
Ad server 142
Transaction Processor 170
Serves content to user device 110; serves a "Buy Now" button 372
User initiates transaction; selects a "Buy Now" button 374
Receive indication of transaction initiation and target site 376
Initiate a payment authorization transaction 378
Create a new transaction record 380
Determine user identity and mobile device identifier associated with user identity 382
Send request for user input to mobile phone associated with user identity 384
Upon receiving indication of user input, process payment and transmit receipt 386
Receive payment; close financial transaction 388

FIG. 2C

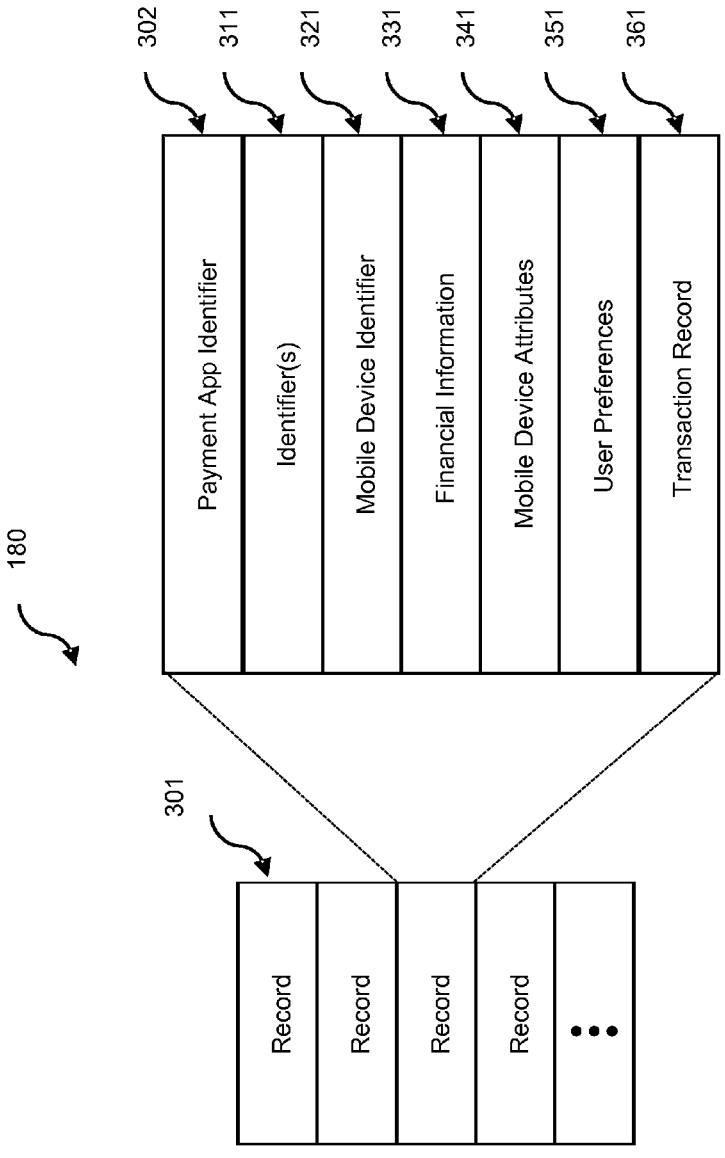

180
301
302
311
321
331
341
351
361
Payment App Identifier
Identifier(s)
Mobile Device Identifier
Financial Information
Mobile Device Attributes
User Preferences
Transaction Record
Record
Record
Record
Record
...

FIG. 3

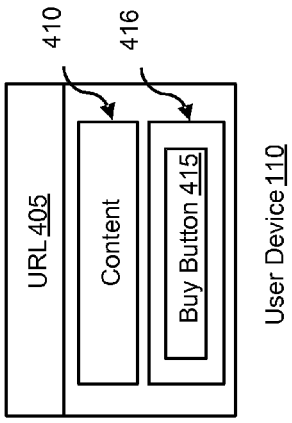


FIG. 4B

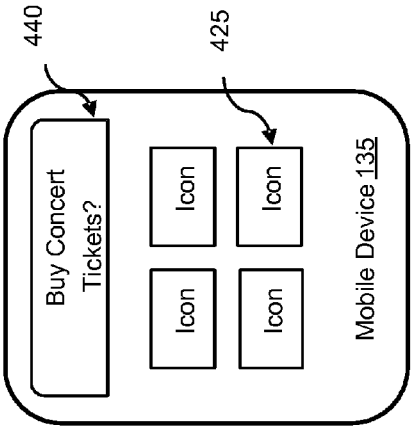


FIG. 4D

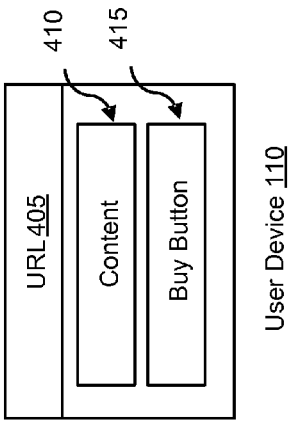


FIG. 4A

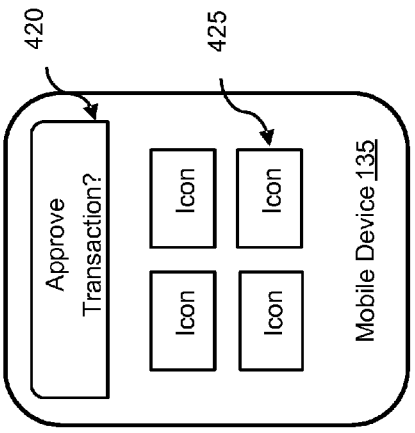


FIG. 4C

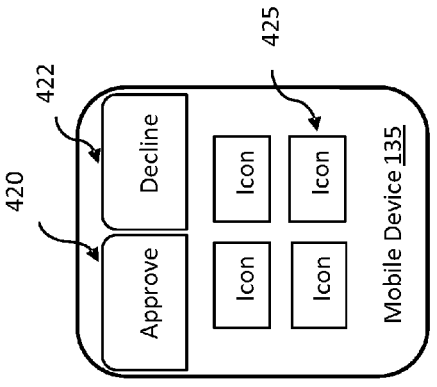


FIG. 4E

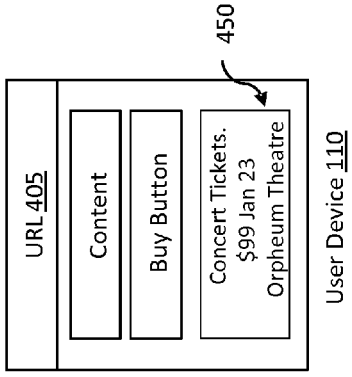


FIG. 4F

FIG. 4G

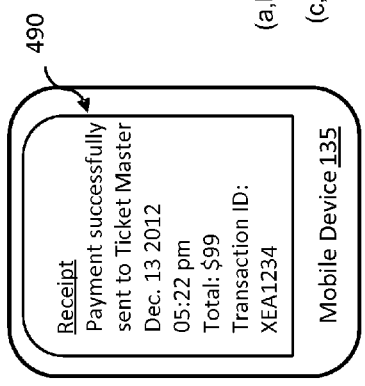


FIG. 4H

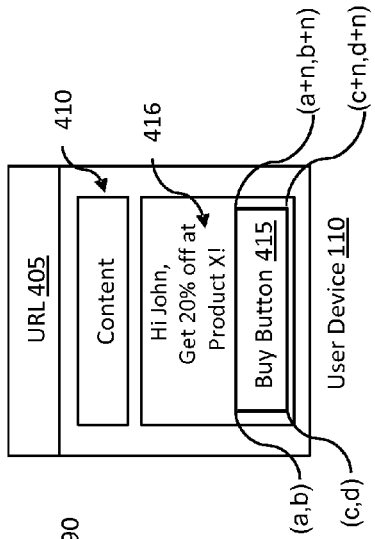


FIG. 4I

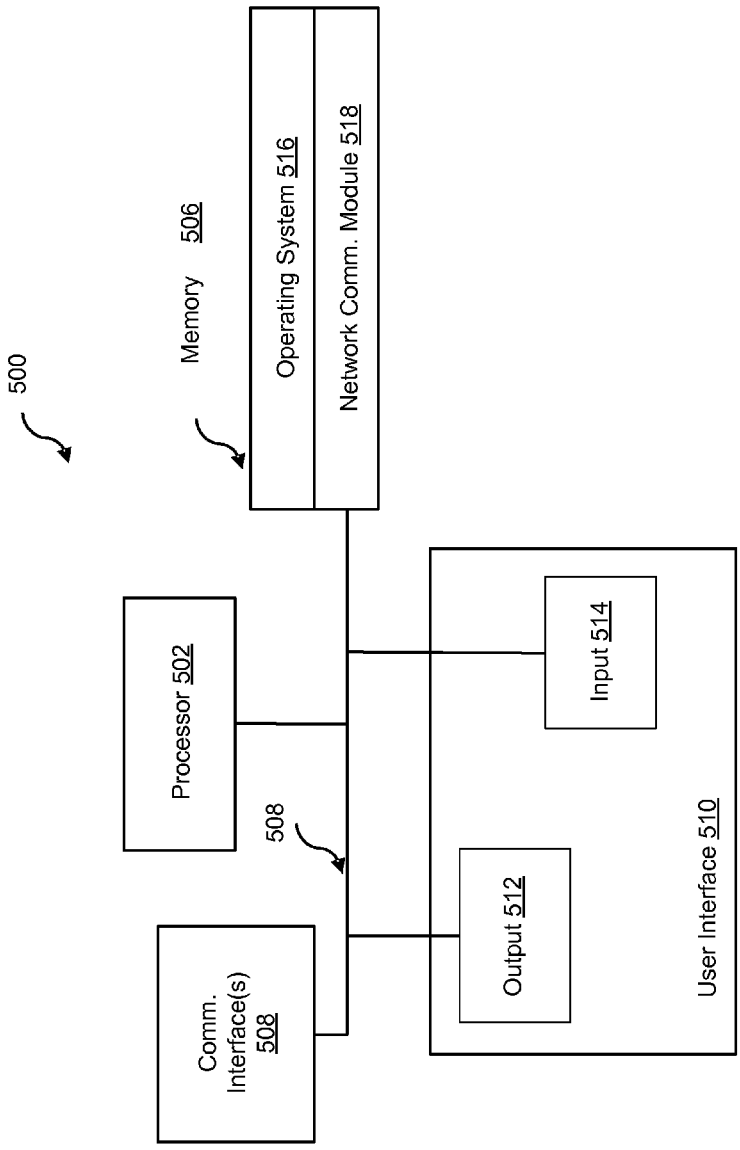

500
Memory 506
Operating System 516
Network Comm. Module 518
Processor 502
508
Comm. Interface(s) 508
Output 512
Input 514
User Interface 510

FIG. 5

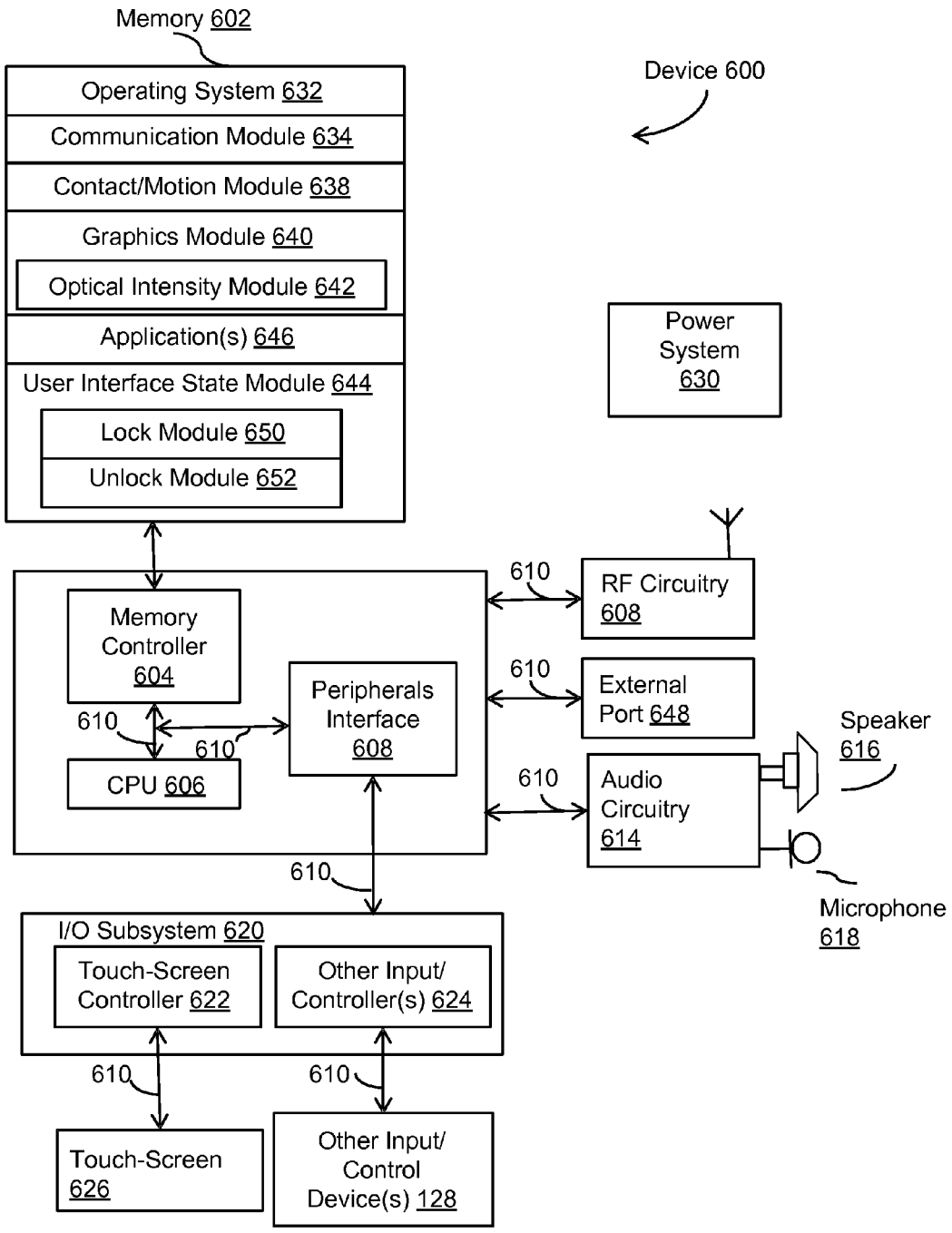

Memory 602
Operating System 632
Communication Module 634
Contact/Motion Module 638
Graphics Module 640
Optical Intensity Module 642
Application(s) 646
User Interface State Module 644
Lock Module 650
Unlock Module 652
Device 600
Power System 630
Memory Controller 604
CPU 606
Peripherals Interface 608
610
RF Circuitry 608
External Port 648
Audio Circuitry 614
Speaker 616
Microphone 618
I/O Subsystem 620
Touch-Screen Controller 622
Other Input/ Controller(s) 624
Touch-Screen 626
Other Input/ Control Device(s) 128

FIG. 6

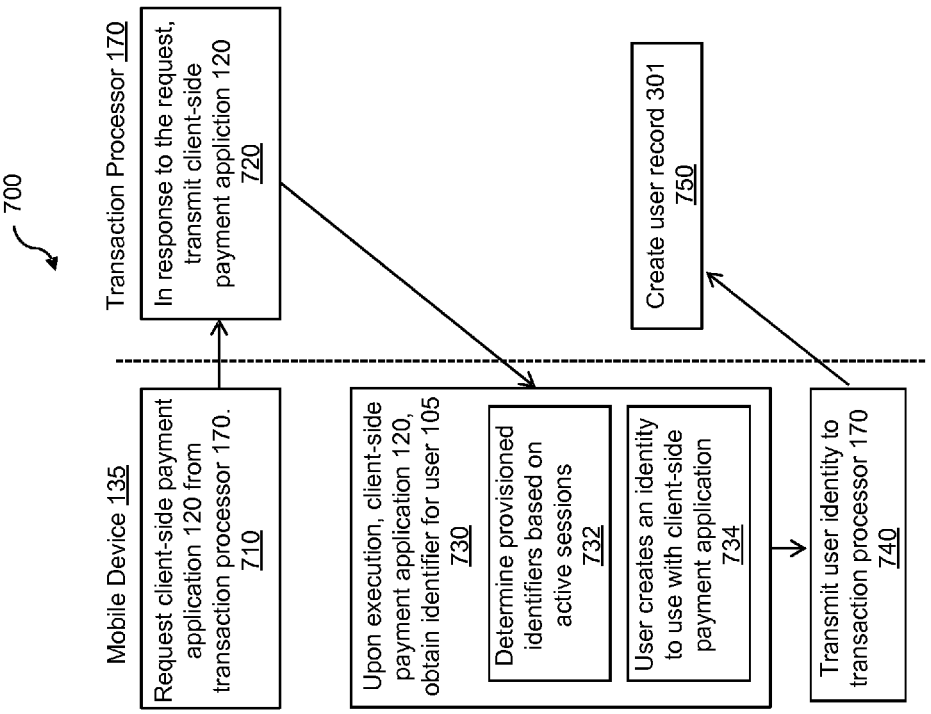

700
Mobile Device 135
Transaction Processor 170
Request client-side payment application 120 from transaction processor 170.
710
In response to the request, transmit client-side payment appliction 120
720
Upon execution, client-side payment application 120, obtain identifier for user 105
730
Determine provisioned identifiers based on active sessions
732
User creates an identity to use with client-side payment application
734
Transmit user identity to transaction processor 170
740
Create user record 301
750

FIG. 7A

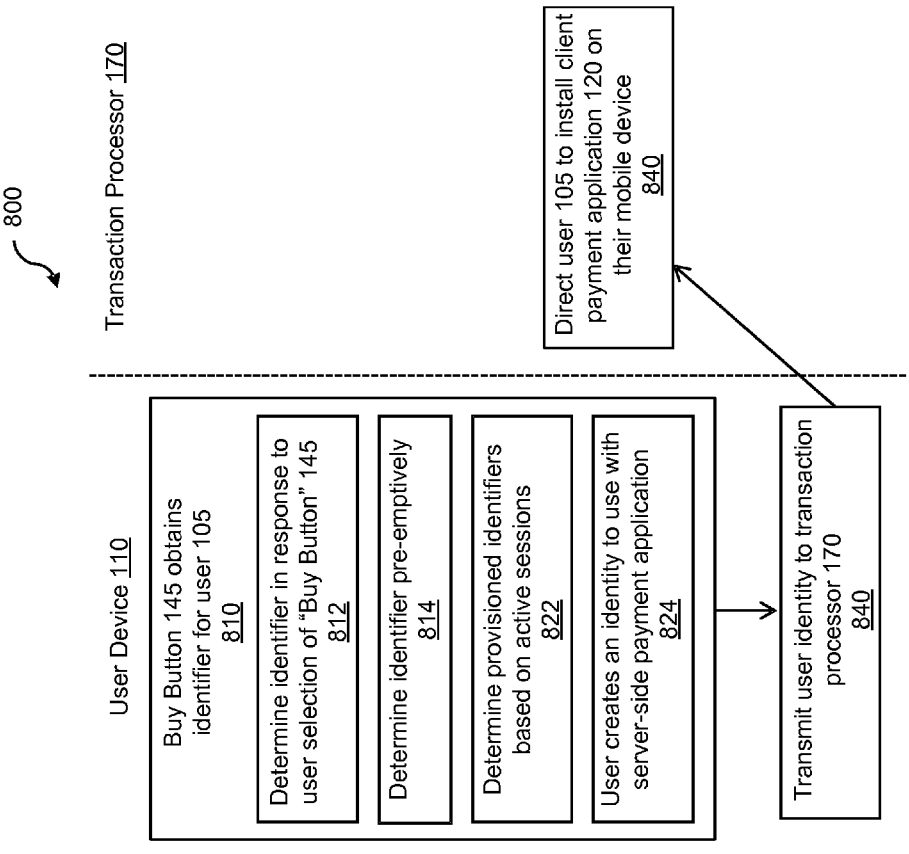

800
Transaction Processor 170
Direct user 105 to install client payment application 120 on their mobile device 840
User Device 110
Buy Button 145 obtains identifier for user 105 810
Determine identifier in response to user selection of "Buy Button" 145 812
Determine identifier pre-emptively 814
Determine provisioned identifiers based on active sessions 822
User creates an identity to use with server-side payment application 824
Transmit user identity to transaction processor 170 840

FIG. 7B

QUICK TRANSACTION COMPLETION USING MOBILE DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims a benefit of, and priority to, U.S. Provisional Patent Application No. 61/687,976, filed on May 4, 2012, entitled "SYSTEMS AND METHODS FOR SINGLE ACTION MUTUAL AUTHENTICATION, IDENTITY, AND AUTHORIZATION SERVICE", which is incorporated by reference in its entirety. The application also claims a benefit of, and priority to, U.S. Provisional Patent Application No. 61/786,013, filed on Mar. 14, 2013, entitled "QUICK TRANSACTION COMPLETION USING MOBILE DEVICE", which is incorporated by reference in its entirety.

BACKGROUND OF THE DISCLOSURE

[0002] 1. Field of the Disclosure

[0003] The disclosure relates generally to e-commerce, and more particularly, to systems and methods for using a mobile device to facilitate electronic payments.

[0004] 2. General Background

[0005] Selling and buying online has required the creation of commerce sites and then requiring the user to interact with the site to buy a particular product. In setting up an item for sale the merchant has to create or list on a commerce site. The commerce site must incorporate a user registration and identity framework and integrate with a payment gateway. The merchant will then have to attract the buyer to the listing location for a transaction to start. Merchants wish to be able to reach their customers on multiple channels, this is typically done via online advertising campaigns. However, when a buyer views an advertisement, the buyer must perform a sequence of steps that typically involves clicking away from the current ad-displaying site and navigate to the merchant's site. Upon arriving at the merchant site, and when shopping online with a merchant, a buyer must perform a sequence of discrete actions. For example, the buyer usually creates an account (selecting a unique user name or if using an email address for identity, verifying the email address) with the merchant, logs in to the account (typically involving many key strokes, and entering a password) , enters details of a funding source (typically a bank or credit card), provides billing address, etc. The buyer places an order at the merchant's site by clicking a "Send Order" (or similar) button on a "Review Order" (or similar) webpage during checkout. The merchant sends the authorization request to a payment processor, which in turn sends the authorization request to the issuing bank (or credit card association). If approved, the buyer is taken to an order confirmation page. On the retail merchant side, the merchant typically has to invest in creating and setting up a security compliant database, without which the customer has to type in the payment card information each time a new transaction is initiated.

[0006] When shopping with one merchant, the user can create an account and store user preference data, such as payment information, with the retail site. However, most users shop online with several different merchants, and therefore, must create several different accounts and remember several different user names and passwords, which can be cumbersome, inconvenient, and prone to security risks (as passwords can be stolen or harvested). Meanwhile sellers wish to be able to minimize the steps involved in converting an advertisement or a product listing into a converted sale, they want to be able to sell securely with few steps. Therefore, a need exists for a payment solution that overcomes the disadvantages described above with conventional payment methods.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] By way of example, reference will now be made to the accompanying drawings, which are not to scale.

[0008] Figures (FIGS.) **1**A and **1**B illustrate block diagrams of systems for implementing some example embodiments.

[0009] FIG. **2**A (FIG.) is a flow example of a single-step authorization process using a user's mobile device according to some example embodiments.

[0010] FIG. **2**B is a flow chart of a dual-step authorization process using a user's mobile device according to some example embodiments.

[0011] FIG. **2**C is a flow chart of a method for initiating a transaction from an advertisement, according to some example embodiments.

[0012] FIG. **3** is a block diagram of a database structure for storing user account data in accordance with certain example embodiments.

[0013] FIGS. **4**A-**4**I are examples of screenshots in accordance with certain example embodiments.

[0014] FIG. **5** is a block diagram of a computing device in accordance with certain example embodiments.

[0015] FIG. **6** is a block diagram of a mobile device in accordance with certain example embodiments.

[0016] FIGS. **7**A and **7**B are block diagrams of a user registration process in accordance with example embodiments.

DETAILED DESCRIPTION

[0017] Those of ordinary skill in the art will realize that the following description is illustrative only and not in any way limiting. Other embodiments will readily suggest themselves to such skilled persons, having the benefit of this disclosure, and the general principles defined herein may be applied to other embodiments and applications without departing from the spirit and scope of the disclosed configurations. Thus, the disclosure is not intended to be limited to the embodiments shown, but is to be accorded the widest scope consistent with the principles and features disclosed herein. Reference will now be made in detail to specific implementations as illustrated in the accompanying drawings. The same reference numbers will be used throughout the drawings and the following description to refer to the same or like parts.

[0018] The data structures and code described in this detailed description are typically stored on a computer readable storage medium, which may be any device or medium that can store code and/or data for use by a computer system. This includes, but is not limited to, magnetic and optical storage devices such as disk drives, magnetic tape, CDs (compact discs) and DVDs (digital versatile discs or digital video discs), and computer instruction signals embodied in a transmission medium (with or without a carrier wave upon which the signals are modulated). For example, the transmission medium may include a communications network, such as the Internet.

[0019] In some embodiments, an identity framework creates a unique user identity and links one or more identities to a user's mobile device identity. In one example, the mobile device is a mobile phone having an associated mobile phone number. The associated mobile phone number is indicated by a user as being able to authorize the user's online financial transaction.

[0020] In some embodiments, a request is transmitted to the mobile device to provide authorization for a transaction. In one embodiment, a request transmitted to the mobile device includes a request for completion of a physical act on the mobile device by the user. The completion of the physical act provides some assurance that the user is in possession and control of the mobile device associated with the user's identity framework. In one embodiment, the request includes verifying a human cognitive function, such a request for depressing a soft button or sliding a key. In another embodiment, the request includes a request for completion of a touch screen gesture. In another embodiment, the request includes a request for entry of a password. In another embodiment, the request includes a request for entry of secret PIN. In another embodiment, the request includes a request for a single action that involves both touch and identification, such as drawn pattern. In another embodiment, the request includes a biometric identification request, such as voice or facial recognition through audio recording or image capture.

[0021] In some embodiments, the type of physical act requested and/or a number of physical acts requested depend on such factors as, the type of financial transaction and/or amount thereof.

[0022] In one embodiment, at least two types of user input are requested from the user using their mobile device to complete the online financial transaction. The first request includes a request for completion of a simple physical act on the mobile device by the user. For example, the simple physical act may be to depress a soft button or complete a touch screen gesture, such as a swipe. The completion of the simple physical act may act to provide some assurance that the user is in possession and control of the mobile device associated with the user's identity framework. The second request may include a request for more sensitive user information, such as a user pin, password, ATM, etc., that provides verification of the user's identity.

[0023] In another embodiment, a request is transmitted to the mobile device to provide authorization for a transaction through biometric verification. This ensures that the mobile device user is authorized to use the mobile device for completing a financial transaction. The user's identity may be verified through audio recordings (e.g., voice recognition) or image/video capture (e.g., facial recognition) performed in response to the transmitted request. The acquired audio, image, or video file may be processed by a biometrics recognition software to verify the identity of the user using the mobile device.

[0024] In one embodiment, upon receiving an indication that a user using a computing device wishes to conduct a new user registration or online financial transaction with an online retailer, the user's identity is created or determined. Instead of requiring the user to create an account and then log into an account with the online retailer, the user's identity may be created and determined from an identity framework generated for the user from at least one of a plurality of sessions the user is in. Thus, for example, a user's identity may be gleaned from a session the user is currently in with, for example, an identity provider such as, a social network site and/or an electronic mail (email) application. For added security and ease of access, a mobile device identifier **136** associated with the user's identity framework is associated and later retrieved for verifying the transaction. A mobile device associated with the retrieved mobile device identifier **136** is used to complete the verification of the user or financial transaction. A request is transmitted to the mobile device to authorize access or the financial transaction. Upon receiving authorization from the mobile device for the access or financial transaction, the access or financial transaction can then be enabled. For example, stored payment information (e.g., bank card, credit card, PAYPAL account information) can be used to complete a payment or the user may be authenticated. The user is not required to perform any steps on their computing device after indicating that they wish to access a service or conduct the online financial transaction. All remaining steps requiring user input are conducted using the user's mobile device.

[0025] In one example embodiment, a seller can create a product listing, and indicate graphically an area within the product listing for the user to interact with in order to either create a new user registration or a initiate a financial transaction. In some embodiments, the product listing is an online graphical advertisement that has a recognizable area that a consumer can interact with. In another example the listing could be textual.

[0026] In some example embodiments, methods and systems for creating a product listing that can be transacted from an advertisement, or third party site, enabling a secure registration framework that links a person's identity to a physical mobile identity and finally enabling a financial transaction using the user's mobile device having an associated mobile device identifier are described herein.

[0027] In one example embodiment, the creation of product listing comprises of specifying co-ordinates of an area that the user must interact with to initiate a transaction.

[0028] Turning now to FIG. **1**A, it illustrates a system **100** according to an example embodiment. System **100** includes a user (or client) device **110**, a merchant server **140**, an identity server **106** and a transaction processor **170** in communication over a network **160**. A user **105**, such as a sender or consumer, utilizes user device **110** to initiate a transaction at a merchant server **140**, such as at a retail web site. Note that transaction, as used herein, refers to any suitable action performed using the user device, including payments, transfer of information, display of information, new user registration, etc. According to an example embodiment, transaction processor **170** utilizes user's mobile device **135** to complete the transaction, as further described herein.

[0029] User device **110**, merchant server **140**, and transaction processor **170** may each include one or more processors, memories, and other appropriate components for executing instructions such as program code and/or data stored on one or more computer readable mediums to implement the various applications, data, and steps described herein. For example, such instructions may be stored in one or more computer readable media such as memories or data storage devices internal and/or external to various components of system **100**, and/or accessible over network **160**.

[0030] Network **160** may be implemented as a single network or a combination of multiple networks. For example, in various embodiments, network **160** may include the Internet or one or more intranets, landline networks, wireless networks, and/or other appropriate types of networks.

[0031] User device **110** may be implemented using any appropriate hardware and software configured for wired and/or wireless communication over network **160**. For example, in one embodiment, the user device may be implemented as a personal computer (PC), a tablet, personal digital assistant (PDA), laptop computer, a smart television, and/or other types of computing devices capable of transmitting and/or receiving data over network **160**.

[0032] User device **110** may include one or more browser applications **115** which may be used, e.g., to provide a convenient interface to permit user **105** to browse information available over network **160**. For example, in one embodiment, browser application **115** may be implemented as a web browser configured to view information available over the Internet, including accessing a social networking site, a web email client, etc.

[0033] In one embodiment, user **105** may use a mobile device **135** (e.g., cellular phone) in communication with a mobile communication network (not shown), having a mobile device identifier **136**, e.g., a mobile phone number, an IDEN number, etc. associated therewith. In another example, the mobile device identifier is an International Mobile Station Equipment Identity (IMEI) number, and the mobile device is a 3GPP (e.g., GSM, UMTS and LTE) or Integrated Digital Enhanced Network (iDEN) mobile phone. Mobile device **135** may optionally include one or more browser applications **116** which may be used, e.g., to provide a convenient interface to permit user **105** to browse information available over network **160**. For example, in one embodiment, browser application **116** may be implemented as a web browser configured to view information available over the Internet, including accessing a social networking site, a web email client, etc.

[0034] User mobile device **135** may further include a client side payment application **120** which, in one embodiment, may be provided by transaction processor **170** (e.g., may be downloaded to user mobile device **135**) and may be used, e.g., to provide client-side processing for performing desired tasks in response to operations selected by user **105**. In one embodiment, client-side payment application **120** may have a unique identifier and is uniquely tied to a mobile device identifier **136** associated with user mobile device **135**. In one embodiment, client application **120** may display a user interface in connection with a financial transaction initiated by user **105** using browser application **115** (executing on user device **110**) as further described herein, in another embodiment it may show access details. In some embodiments, user device **110** and user mobile device **135** may be the same device. For example, if the user device **110** is registered in the user's identity framework as the authorized mobile device **135**, then the request for a financial transaction authorization is sent to the user device **110**. Thus, the user **105** may be able to start a transaction on the user device **110**, have the transaction authorization request sent to the same user device **110**, and complete the transaction on the user device **110**.

[0035] Associated with user **105** are one or more identifiers **113** (e.g., username and password pairs) that the user **105** is currently using to access one or more websites and content available using user device **110** via network **160**, including email sites, social networking sites, etc. For example, user **105** may currently be using a first username and password to access a social media account, e.g., FACEBOOK account, a second username and password to access an email account, e.g., a GMAIL account, a third username and password to access an online retailer, and so on. One or more of the identifiers **113** may be stored locally on the client device **110**, e.g., in cookies or a cache associated with browser application **115** and may be capable or being used to authenticate the User **105** from a central identity server **106** across multiple sites and identities. A identity record is created by identity match module **158** and stored in user information database **180** and uniquely associated with a mobile device identifier **136**.

[0036] In some embodiments, user identity aggregation is performed by a user aggregation module **107** executing on an identity server **106**, such as a third-party identity provider. In some embodiments, user aggregation module **107** comprises software to aggregate a user's provisioned identities **113** from the user device **110**. Identity aggregation module **107** communicates with transaction processor **170** and merchant server **140** to pass identity information in order to facilitate a registration or a payment transaction. One embodiment of aggregation module **107** may be browser pop-up or an overlay, a browser plugin, a browser tool bar, etc.

[0037] Merchant server **140** may be maintained, e.g., by a merchant or seller offering various products and/or services in exchange for payment to be received over network **160**. Merchant server **140** may be used for point of sale (POS) or online purchases and transactions. Generally, merchant server **140** may be maintained by anyone or any entity that provides an Internet based service including those that receive money, which includes charities as well as retailers and restaurants. Merchant server **140** may also refer to an entity listing an advertisement for a product or service. Merchant server **140** may include a marketplace application **150** configured to serve information over network **160** to browser **115** of user device **110**. For example, merchant server **140** may cause a webpage to be displayed via browser application **115** on a display associated with user device **110**. The webpage may contain content, such as information about a product for sale. Merchant server **140** may maintain, e.g., a product database **182** containing information of products or merchandise or content that is available for purchase with "Buy Button".

[0038] In one embodiment, the buy button module **155** executing on transaction processor **170** provides new user registration and causes registration information to be stored in user database **180**. A user selecting a Buy Button causes buy button module **155** to cause invocation of identity aggregation module **107** which aggregates user's provisioned identities on user device **110**. Identity aggregation module **107** communicates this information to transaction processor **170**, where identity match module **158** causes a user record to be created in user information database **180**.

[0039] In one embodiment, a "Buy Button" interface module **156** on the merchant server **140** provides a checkout or payment function, called herein a "Buy Now" button or "Buy Button". In another embodiment, a buy button module **155** on transaction processor **170** provides the "Buy Button," which can be embedded or otherwise inserted into content in a web page enabled by merchant server **140** on user device **110**. "Buy Button" may be embedded in an advertisement, e.g., a pop-up advertisement, or may be part of a social media feed, such as a TWITTER feed, or may be part of email content, application data etc., as served by merchant server **140**.

[0040] Transaction processor **170** may be maintained, e.g., by an online payment service provider which may provide payment between user **105** and the operator of merchant server **140**. In this regard, transaction processor **170** may include one or more payment applications **175** which may be

configured to interact with user device **110** and/or merchant server **140** over network **160** to facilitate the purchase of goods or services, communicate/display information, and send payments by user **105** of user device **110**. According to an embodiment, server-side payment application **175** is also configured to communicate with client-side payment application **120** executing on mobile device **135** to enable order authorization, as discussed further with reference to FIGS. **2** and **4**.

[0041] Transaction processor **170** may maintain a database of user accounts **180**, each of which may include user account information associated with individual users, as discussed further with reference to FIG. **3**. For example, account information may include private financial information of users of devices such as account numbers, passwords, device identifiers, user names, phone numbers, credit card information, bank information, or other financial information which may be used to facilitate online transactions by user **105**. In one embodiment, this information may be provided by the user in creating an account with and registering with server-side payment application **175**, e.g., when installing client-side payment application **120** on user mobile device **135**, as discussed further with reference to FIGS. **7**A and **7**B.

[0042] Server side payment application **175** may be configured to interact with merchant server **140** during a transaction conducted using "Buy Now" button to receive information about a transaction initiated by user **105**. Server side payment application **175** may further be configured to receive information from user device **110** and/or client-side payment application **120** for processing and storage in user account database **180**. Payment application **175** may be further configured to determine the existence of and to manage accounts for user **105**, as well as create new accounts if necessary, such as the set up, management, and use of a smart wallet for the user/mobile device.

[0043] Transaction processor **170** may further store other applications, such as a transaction processing application **190** for using funding source information, such as credit card and bank card information to process payment to merchant server **140** on behalf of user **105**. For example, a product shipping module (not shown) may perform at least one product shipping-related functionality, such as causing a product to be shipped to a buyer.

[0044] Referring to FIG. **1**B illustrates a block diagram of a system **101** according to an example embodiment. System **101** is the same as system **100** except that an advertisement server **142** serves advertisement content, called herein an "ad" or "listing" or "product listing" (e.g., from an advertisement content database **144**) to be included in web content served by merchant server **140**. As illustrated in FIG. **1**B, user **105** may be viewing an ad or listing **111** on a display device **109** associated with user device **110**. Ad or listing **111** may be included in a web page, email, etc and may be associated with a product. Ad or product listing **111** includes a selectable area **112**, which when clicked or otherwise selected by user **105** indicates to ad server **142** that user **105** wishes to purchase the product associated with the ad. Referring for instance to FIG. **4**F, buy button **415** may be embedded in or otherwise included in advertisement content **416** (e.g., advertisement, promotion, promotional message, coupon, etc.) associated with web content **410** served by advertisement server **142**. This way, user **105** experiences advertisement content as a checkout method or a shopping cart. Furthermore, the user **105** does not need to navigate away from URL **405**, thus reducing possibility of fraud. FIG. **4**F further illustrates, in an embodiment, a set co-ordinates (a,b), (c,d), (a+n, b+n), and (c+n, d+n) that define the area that buy button **415** inhabits within ad or product listing **416**. The example illustrated of a rectangular buy button **415** is merely illustrative, and buy button may take other shapes.

[0045] Referring back to FIG. **1**B, in some embodiments, ad server **142** comprises a selectable area placement module **146**, which determines a location of the selectable area **112** within an ad **111**. In some embodiments, selectable area placement module **146** specifies which co-ordinates within an advertisement **111**, the selectable area **112** is to be located. In some embodiments, selectable area placement module **146** specifies which pixels within an advertisement **111**, the selectable area **112** is to be located. In some embodiments, an advertiser **143** interfaces with an ad server **142** (e.g., via an ad server interface) to define user action area specifications of the graphical ad **144**. Accordingly, in some embodiments, the selectable area placement module **146** receives user input from advertiser **143** to define the location of the selectable area **112** within an ad **111**.

[0046] In some embodiments, selectable area placement module **146** specifies selectable area attributes comprising of coordinates and HTML location indicators, which can then be used by computing systems to indicate an actionable area to user **105** and to record a transaction request. In one embodiment the coordinates are specified by advertiser **143** and transmitted to advertising server **142** to enable a clickable area in an advertisement.

[0047] According to an embodiment, transaction processor **170** utilizes user's mobile device **135** to complete the transaction, as further described herein.

[0048] Ad server **142** may include one or more processors, memories and other appropriate components for executing instructions such a program code and/or data stored on one or more computer readable mediums to implement various applications, data and steps described herein. For example, such instructions may be stored in one or more computer readable media such as memories or data storage devices internal and/or external to various components of system **102** and/or accessible over network **160**.

[0049] Ad listing **111** may be a graphical or a video listing. It may include a user clickable element **112** to capture intent to initiate a transaction, such as to register a user, conduct a purchase transaction, and so on. In some embodiments, the ad listing **111** is an online graphical advertisement. In another example the listing could be textual.

[0050] Turning to FIG. **2**A, it illustrates a process **200** for a single step order confirmation process according to an embodiment of the invention. Merchant server **140** serves content to user device **110** (**205**). User **105** may interact with marketplace application **150** through browser application **115** over network **160** in order to view one or more items served by merchant server **140**. Merchant server **140** and/or ad server **142** may further provide a "Buy Now" button or other button inviting user **105** to initiate a transaction (**205**).

[0051] If user **105** wishes to purchase an item for sale or otherwise initiate a transaction, the user may select the associated "Buy Now" button (**210**), as illustrated further with reference to FIG. **4**A. An interesting note is that the user is not required to create or log into an account associated with the merchant server **140** for the purposes of initiating the transaction. As illustrated in FIG. **4**A, user **105** may be visiting a web page associated with URL **405** rendering content **410**

having associated therewith "Buy Button" **415**. "Buy Button" **415** may be embedded in an advertisement, e.g., a pop-up advertisement, or may be part of a twitter feed, or may be part of the content **410**, email content, application data etc. In one embodiment, as further illustrated in FIG. **4**B, "Buy Now" button **415** is included in an advertisement **416**.

[0052] As discussed with reference to FIGS. **1**A and **1**B, user device **110** used to access the web page may be a personal computer (PC), a tablet, personal digital assistant (PDA), laptop computer, a smart television, and/or other types of computing devices capable of transmitting and/or receiving data over network **160**. For example, a user may access an item for sale **410** or an advertisement **416** on their television while visiting a media library application, such as iTunes.

[0053] "Buy Now" button **415** is configured to facilitate the purchase by user **105** of one or more goods or services identified within content **410**. When user **105** selects "Buy Button" **415**, a financial transaction is initiated to transaction processor **170** over network **160** (step **215** in FIG. **2**A), as discussed further herein. In some embodiments, transaction processor **170** receives an indication of transaction initiation (**215**), as well as some other details about the transaction. For example, a transaction amount, details about the product or services being purchased, availability of the product or services being purchased, identification of merchant server **140** providing the product or services may be transmitted to transaction processor **170**. In some embodiments, the product or services being purchased may be free of charge, e.g., a coupon, a promotion, or an advertisement.

[0054] Upon receiving indication of an initiated financial transaction from "Buy Now" button, transaction processor **170** sets about to determine the identity of user **105** (**220**). As mentioned earlier, the user may not have entered a username and password into the merchant server's site and as such, no identifying information necessarily gets transmitted from the merchant server **140** to transaction processor **170**. As such, transaction processor **170** must first determine the user associated with the initiated transaction. In one embodiment, transaction processor **170** generates an identity framework for the user utilizing user identifiers gleaned from one or more other websites with which the user **105** is currently in session with using browser **115** and for which the user **105** has provided user identifiers. As discussed above, e.g., user **105** may have logged into an account associated with a social networking site and/or an email site. Most users may leave such sessions running in the background while they conduct other business online. These logged-into sessions may be used to determine an identity associated with user **105**, by identity aggregation module **107**.

[0055] As can be appreciated, it is desirable to make certain that the user initiating the transaction is indeed authorized to initiate the transaction. In order to do so, upon determining an identity of the user associated with the initiated transaction, transaction processor **170** determines a mobile device identifier **136** associated with the identity (**225**). The mobile device identifier **136** may be previously stored in a user database **180**, which may be populated, e.g., during a user registration process completed when user **105** installed client-side payment application **120** on mobile device **135**. In some embodiments, identity match module **158** receives a user's provisioned identities **113** from identity aggregation module **107**, retrieves a corresponding user record exists in user database **180**, and retrieves the mobile device identifier **136** from the user record.

[0056] Transaction processor **170** sends a request for user input to the mobile device having an associated identifier **136** determined at step **225** (**230**). In one embodiment, the request for user input to the mobile device is transmitted via a Unstructured Supplementary Service Data (USSD) session. Other types of methods for communication between transaction processor **170** and mobile device **134** can also be used. In another embodiment, the request for user input to the mobile device is transmitted to client-side payment application **120**, which renders a user interface, such as, illustrated in FIGS. **4**C, **4**D, **4**E, and **4**G-**4**I.

[0057] In one embodiment, at **230**, client-side payment application **120** executing on user mobile device **134** is launched or awakened remotely. For instance, server-side payment application **175** may cause a mobile carrier network to start a USSD session.

[0058] In one embodiment, the request for user input includes a request for completion of a physical act on the mobile device by the user. The completion of the physical act provides some assurance that the user is in possession and control of the mobile device associated with the user's identity framework. In one embodiment, the request for authorization is sent to mobile device **135** via a USSD session, e.g., using Signaling System 7 (SS7) protocol. In another embodiment, the request for authorization is sent to a payment application **120** executing on mobile device **135**. FIG. **4**C illustrates an example of a request for user input as received on a mobile device **135**. In the example illustrated in FIG. **4**C, mobile device **135** has a touch screen displaying several icons **425** referring to various applications available on the mobile device **135**. A message **420** is also displayed on the touch screen and represents a soft button, inviting the user of mobile device **135** to approve transaction by depressing the soft button. In the example illustrated in FIG. **4**C, no information is provided in the initial message **420** about the transaction, since it can be assumed that the user has initiated the transaction (as illustrated in FIG. **4**A) and therefore, has knowledge of it. In another embodiment, at least some information can be provided in the message about the transaction, as illustrated in FIG. **4**D, which shows a message **440** asking the user to "Buy concert tickets." In yet another embodiment, details about the proposed transaction are provided, e.g., in a popup **450**, at the user device **110**, as illustrated in FIG. **4**F.

[0059] In one embodiment, the request for user input includes a request for depressing a soft button (as illustrated in FIGS. **4**C and **4**D). In another embodiment, the request includes a request for completion of another touch screen gesture, such as a swipe, flick, etc. In another embodiment, the request includes a request for entry of a password (e.g., associated with client-side payment application **120**). In another embodiment, the request includes a request for entry of a bank ATM pin or other secret pin (as illustrated in FIG. **4**G). In some embodiments, the type of physical act requested depends on the type of financial transaction and/or amount thereof. In some embodiments, the type of physical act requested depends on the type and capabilities of the mobile device **135**. Thus, accordingly, if the mobile device **135** has a touch screen capable of receiving touch input, a requested physical act may include a swipe. Such a physical act request would not be requested of a mobile device **135** that does not have a touch screen. In other embodiments, the mobile device **135** may use biometric recognition capabilities to verify the user's identity, such as through audio capabilities (e.g., voice recognition) or image/video capture capabilities (e.g., facial

recognition). The captured audio or image/video is processed through recognition software to identify the user in possession of the mobile device **135**.

[0060] Client-side payment application **120** executing on the user mobile device **135** renders the request for user input (**235**). The rendering may include display of the request for authorization. In other embodiments, the rendering may include a sound alert.

[0061] User mobile device **135** receives user input corresponding to the request for authorization (**240**). User input may include the user depressing a soft button, completing a touch screen gesture, entering a password, entering a bank ATM pin, a secret pin, recording a user's voice, capturing an image of a user's facial features, etc. User mobile device **135** (and/or payment application **120**) transmits (either via push or pull) an indication of user input to transaction processor **170** (**240**). In some embodiments, depending on the sensitivity of the nature of information being transmitted, it may be protected, e.g., using encryption techniques. Client-side payment application **120** executing on the user mobile device **135** may process the user input, e.g., hash and salt the user-entered password or pin, and transmit the hashed and salted password to transaction processor **170**, for instance via a USSD session.

[0062] In some embodiments, user input is valid for a limited duration. Accordingly, if the user input is not received at the transaction processor **170** within a certain predetermined amount of time, transaction processor **170** deems the transaction unsuccessful. If the user **105** does not provide the input requested at step **235**, either in a timely fashion or not at all, the transaction processor **170** deduces that the transaction is either not initiated by user **105** or the user **105** has changed their mind or the user **105** initiated the transaction by mistake. Transaction processor **170** cancels the transaction, and may send a cancellation message to merchant server **140** and/or may send a message, such as a fraud alert to the user **105**, e.g., via an SMS to mobile device **135**.

[0063] In some embodiments, in addition to providing provide an option for the user to approve the transaction (such as, illustrated in FIGS. **4**C and **4**D), the request for user input rendered at **235** includes an option to cancel the transaction (as illustrated in FIG. **4**E as button **422**). If the user **105** selects the cancel transaction option at step **235**, this information is transmitted to transaction processor **170** and the transaction is cancelled.

[0064] Transaction processor **170** uses the received user input to authorize the transaction (**245**), and to make payment to the merchant server **140**. The user input may be compared to information stored, e.g., in user account information **180**, or may be sent to a third party (such as, a bank card or credit card issuing authority) for authorization.

[0065] Merchant server **140** receives the payment from transaction processor **170** (e.g., via a bank or other intermediary) and processes the transaction (e.g., ships purchased goods). In one embodiment, transaction processor **170** also provides user details, e.g., shipping preferences to merchant server **140**, as obtained from user account information **180**. Transaction processor **170** transmits a transaction confirmation to mobile device **135**, which is then rendered at mobile device **135** (**265**). FIG. **4**H illustrate an example of a transaction confirmation **490** being displayed at mobile device **135**. Transaction confirmation **490** may contain such details as transaction amount, transaction date and time, a transaction record number, payment source, etc. Although not illustrated in FIG. **4**H, user may be provided with options with respect to transaction confirmation **490**, such as to save, print, email the receipt, etc.

[0066] Thus, process **200** enables a single step authorization of a transaction initiated using a user device **110** and authorized using user mobile device **135**. Note that no authorization or other input was required from the user **105** at user device **110** and only input requested was at user's mobile device **135** (after initiation of transaction at user device **110**).

[0067] Referring now to FIG. **2**B, it illustrates a process **300** for a dual step order confirmation process according to an example embodiment. Process **300** is similar to process **200**, except after receipt of an initial user input from user mobile device **135** (at step **330**), transaction processor **170** sends a request for authorization to mobile device **135** (**345**). In some embodiments, the first request for user input (at step **330**) may include a request for a simple task, e.g., to signify that the user is in possession of the mobile device **135**, while the second request for user input (at step **345**) may request sensitive user information. The sensitive user information can be matched against stored information for the user or otherwise used for authorization. For example, a first request of user input may require the user to depress a soft button (e.g., depress a "Approve Transaction" button, as illustrated in FIGS. **4**C and **4**D), while the second request may require the user to enter a pin or password. In one embodiment, a hash of the pin or password is transmitted by the mobile device as indication of authorization. If no indication of user input is received (at **355**), the transaction is cancelled, and no request for authentication information is sent at step **345**. Turning to FIG. **4**G, it illustrates an example of an authorization process requesting user of mobile device **135** to provide a pin **470** using keypad **480** to approve a transaction in addition to providing details **460** about the transaction.

[0068] Transaction processor **170** uses the received authorization information to authorize the transaction (**355**), and to make a payment to the merchant server **140**. The user authorization information may be compared to information stored, e.g., in user account information **180**, or may be sent to a third party (such as, a bank card or credit card issuing authority) for authorization. In one embodiment, no payment may be due to the merchant server **140**, e.g., when a product being purchased is free of charge. However, the process **200** may be used to confirm completion of the transaction.

[0069] In some embodiments, the number of physical acts (one as discussed with reference to FIG. **2**A and two as discussed with reference with FIG. **2**B) requested depend on the type of financial transaction and/or amount thereof and/or user preferences. Thus, a user **105** may cause a preference to be stored, e.g., in a user account maintained with transaction processor **170** that the user wishes dual-step authorization for purchases over a particular amount, or for transactions with a particular merchant, etc.

[0070] In the system and methods illustrated in FIGS. **1**A, **1**B and **2**A-C respectively, the client device **110** and mobile device **135** are illustrated as two separate devices. In another embodiment, the mobile device **135** alone is sufficient. Accordingly, user **105** may use browser application **116** on mobile device **135** to access content served by merchant server **140**, and transaction processor **170** may use the mobile device **135** for user authorization.

[0071] Referring to FIG. **2**C, it illustrates a flow chart of a method **370** for completing a transaction that is initiated from an ad or listing according to certain embodiments.

[0072] Advertisement server **142** outputs an ad/listing for serving to user device **110**. The ad/listing may be provided to the merchant server **140** for serving to the user device **110** (**372**). In one embodiment, selectable area placement module **146** specifies which real estate (e.g., co-ordinates and/or pixels) of the advertisement are to be inhabited by a selectable area, e.g., called the Buy Button. This real estate information can be useful to determine revenue from the advertisement. For example, a selection of the selectable are within ad/listing click determines that the user attempted to purchase the item promoted by the advertisement, which provides a more accurate way of monetizing the advertisement than, say CPV (cost of advertisement per view). An example of an ad is illustrated in FIG. **4**F.

[0073] If user **105** clicks on or otherwise selects the pixels inhabited by the Buy Button (**374**), advertisement server **142** receives an indication of transaction initiation and target site (**376**). In some embodiments, Ad server **142** initiates a payment authorization transaction over network **160** (**378**), which prompts transaction processor **170** to creates a new transaction record (**380**). Identity aggregation module **107** determines one or more provisioned user identities **113** (**382**), and communicates the information to transaction processor **170**, where identity match module **158** determines if an identity received from identity aggregation module **107** matches an identity stored in user information database. If a provisioned Identity **113** matches an ID in a user record in user information database **180**, a transaction or payment authorization may be initiated with the mobile device **135** associated with the user record (**384**), as described with reference to FIGS. **2**A and **2**B (**225** and **230**).

[0074] Turning to FIG. **3**, it is a block diagram of an example database structure **180**. Database structure **180** contains a set of user account records. A respective user account record **301** may include such information as: (i) an identifier **302** that uniquely identifies the (instance of) client-side payment application **120**, (ii) one or more user identifiers **311** associated with the user (e.g., user's login user name and password associated with a social networking site, user's email login user name and password, user's account user name and password associated with an online merchant, etc.), (iii) a mobile device identifier **321** associated with the user, such as a mobile phone number, an IDEN number, etc. (iv) private financial information **331** of the user, such as credit card information, bank information, or other financial information which may be used to facilitate online transactions by user, (v) attributes and capabilities **341** of the mobile device associated with the device number **321**, (vi) user preferences **351** (such as, shipping address, etc.), and (vii) transaction records **361** (such as, transaction amounts, dates, etc.) associated with the user record **301**.

[0075] Referring now to FIG. **5**, it is a block diagram of an exemplary computing device **500**, which can be used as any one of user device **110**, merchant server **140** and transaction processor **170**. In one embodiment computing device **500** typically includes one or more processing units (CPUs) **502**, one or more network or other communications interfaces **508**, memory **506**, and one or more communication buses **508** for interconnecting these components. The communication buses **508** may include circuitry (sometimes called a chipset) that interconnects and controls communications between system components. Computing device **500** may include a user interface **510** comprising an output (e.g. display) device **512** and an input device (e.g., keyboard) **514**.

[0076] Memory **506** includes high-speed random access memory, such as DRAM, SRAM, DDR RAM or other random access solid state memory devices; and may include non-volatile memory, such as one or more magnetic disk storage devices, optical disk storage devices, flash memory devices, or other non-volatile solid state storage devices. Memory **506** may optionally include one or more storage devices remotely located from the CPU(s) **502**. Memory **506**, or one or more of the storage devices (e.g., one or more non-volatile storage devices) in memory **506**, includes a computer readable storage medium. In some embodiments, memory **506** or the computer readable storage medium of memory **506** stores the following programs, modules and data structures, or a subset thereof: an operating system **516** that includes procedures for handling various basic system services and for performing hardware dependent tasks; a network communication module **518** that is used for connecting computing device **500** to other computers via the one or more communication network interfaces **508** and one or more communication networks, such as the Internet, other wide area networks, local area networks, metropolitan area networks, and so on. In case of client device **110**, memory **506** may further store other applications, such as browser application **115**, word processing applications, etc. In case of merchant server **140**, memory **506** may further store a marketplace application **150** and "buy button" interface module **156**. In case of transaction processor **170**, memory **506** may further store server-side payment application **175**, an identity match module **158**, database of user accounts **180** (which of course may be stored externally), transaction processing application **190**, and so on. In case of ad server **142**, memory **506** may further store selectable area placement module **146** for defining a location of the selectable area **112** within an ad **111**, e.g., based on input from advertiser **143**. In case of identity server **106**, memory **506** may further store identity aggregation module **107**.

[0077] FIG. **6** illustrates an example portable electronic device **600**, which can function as user mobile device **135**. The device **600** includes a memory **602**, a memory controller **104**, one or more processing units (CPU's) **606**, a peripherals interface **608**, RF circuitry **612**, audio circuitry **614**, a speaker **616**, a microphone **618**, an input/output (I/O) subsystem **620**, a touch screen **626**, other input or control devices **628**, and an external port **648**. These components communicate over the one or more communication buses or signal lines **610**. It should be appreciated that the device **600** is only one example of a portable electronic device **600**, and that the device **600** may have more or fewer components than shown, or a different configuration of components. The various components shown in FIG. **6** may be implemented in hardware, software or a combination of both hardware and software, including one or more signal processing and/or application specific integrated circuits.

[0078] The memory **602** may include high speed random access memory and may also include non-volatile memory, such as one or more magnetic disk storage devices, flash memory devices, or other non-volatile solid state memory devices. In some embodiments, the memory **602** may further include storage remotely located from the one or more processors **606**, for instance network attached storage accessed via the RF circuitry **612** or external port **648** and a communications network (not shown) such as the Internet, intranet (s), Local Area Networks (LANs), Wide Local Area Networks (WLANs), Storage Area Networks (SANs) and the

like, or any suitable combination thereof. Access to the memory **602** by other components of the device **600**, such as the CPU **606** and the peripherals interface **608**, may be controlled by the memory controller **604**.

[0079] The peripherals interface **608** couples the input and output peripherals of the device to the CPU **606** and the memory **602**. The one or more processors **606** run various software programs and/or sets of instructions stored in the memory **602** to perform various functions for the device **600** and to process data.

[0080] In some embodiments, the peripherals interface **608**, the CPU **606**, and the memory controller **604** may be implemented on a single chip, such as a chip **611**. In some other embodiments, they may be implemented on separate chips.

[0081] The RF (radio frequency) circuitry **612** receives and sends electromagnetic waves. The RF circuitry **612** converts electrical signals to/from electromagnetic waves and communicates with communications networks and other communications devices via the electromagnetic waves. The RF circuitry **612** may include well-known circuitry for performing these functions, including but not limited to an antenna system, an RF transceiver, one or more amplifiers, a tuner, one or more oscillators, a digital signal processor, a CODEC chipset, a subscriber identity module (SIM) card, memory, and so forth. The RF circuitry **612** may communicate with the networks, such as the Internet, also referred to as the World Wide Web (WWW), an Intranet and/or a wireless network, such as a cellular telephone network, a wireless local area network (LAN) and/or a metropolitan area network (MAN), and other devices by wireless communication. The wireless communication may use any of a plurality of communications standards, protocols and technologies, including but not limited to Global System for Mobile Communications (GSM), Enhanced Data GSM Environment (EDGE), wideband code division multiple access (W-CDMA), code division multiple access (CDMA), time division multiple access (TDMA), Bluetooth, Wireless Fidelity (Wi-Fi) (e.g., IEEE 802.11a, IEEE 802.11b, IEEE 802.11g and/or IEEE 802.11n), voice over Internet Protocol (VoIP), Wi-MAX, a protocol for email, instant messaging, and/or Short Message Service (SMS)), or any other suitable communication protocol, including communication protocols not yet developed as of the filing date of this document.

[0082] The audio circuitry **614**, the speaker **616**, and the microphone **618** provide an audio interface between a user and the device **600**. The audio circuitry **614** receives audio data from the peripherals interface **608**, converts the audio data to an electrical signal, and transmits the electrical signal to the speaker **616**. The speaker converts the electrical signal to human-audible sound waves. The audio circuitry **614** also receives electrical signals converted by the microphone **616** from sound waves. The audio circuitry **614** converts the electrical signal to audio data and transmits the audio data to the peripherals interface **608** for processing. Audio data may be may be retrieved from and/or transmitted to the memory **602** and/or the RF circuitry **612** by the peripherals interface **608**. In some embodiments, the audio circuitry **614** also includes a headset jack (not shown). The headset jack provides an interface between the audio circuitry **614** and removable audio input/output peripherals, such as output-only headphones or a headset with both output (headphone for one or both ears) and input (microphone).

[0083] The I/O subsystem **620** provides the interface between input/output peripherals on the device **600**, such as the touch screen **626** and other input/control devices **628**, and the peripherals interface **608**. The I/O subsystem **620** includes a touch-screen controller **622** and one or more input controllers **624** for other input or control devices. The one or more input controllers **624** receive/send electrical signals from/to other input or control devices **628**. The other input/control devices **628** may include physical buttons (e.g., push buttons, rocker buttons, etc.), dials, slider switches, sticks, and so forth.

[0084] The touch screen **626** provides both an output interface and an input interface between the device and a user. The touch-screen controller **622** receives/sends electrical signals from/to the touch screen **626**. The touch screen **626** displays visual output to the user. The visual output may include text, graphics, video, and any combination thereof. Some or all of the visual output may correspond to user-interface objects, further details of which are described below.

[0085] The touch screen **626** also accepts input from the user based on haptic and/or tactile contact. The touch screen **626** forms a touch-sensitive surface that accepts user input. The touch screen **626** and the touch screen controller **622** (along with any associated modules and/or sets of instructions in the memory **602**) detects contact (and any movement or break of the contact) on the touch screen **626** and converts the detected contact into interaction with user-interface objects, such as one or more soft keys, that are displayed on the touch screen. In an exemplary embodiment, a point of contact between the touch screen **626** and the user corresponds to one or more digits of the user. The touch screen **626** may use LCD (liquid crystal display) technology, or LPD (light emitting polymer display) technology, although other display technologies may be used in other embodiments. The touch screen **626** and touch screen controller **622** may detect contact and any movement or break thereof using any of a plurality of touch sensitivity technologies, including but not limited to capacitive, resistive, infrared, and surface acoustic wave technologies, as well as other proximity sensor arrays or other elements for determining one or more points of contact with the touch screen **626**. However, the touch screen **626** displays visual output from the portable device, whereas touch sensitive tablets do not provide visual output. The touch screen **626** may have a resolution in excess of 600 dpi. In an exemplary embodiment, the touch screen **626** may have a resolution of approximately 668 dpi. The user may make contact with the touch screen **626** using any suitable object or appendage, such as a stylus, finger, and so forth.

[0086] In some embodiments, in addition to the touch screen, the device **600** may include a touchpad (not shown) for activating or deactivating particular functions. In some embodiments, the touchpad is a touch-sensitive area of the device that, unlike the touch screen, does not display visual output. The touchpad may be a touch-sensitive surface that is separate from the touch screen **626** or an extension of the touch-sensitive surface formed by the touch screen **626**.

[0087] The device **600** also includes a power system **630** for powering the various components. The power system **630** may include a power management system, one or more power sources (e.g., battery, alternating current (AC)), a recharging system, a power failure detection circuit, a power converter or inverter, a power status indicator (e.g., a light-emitting diode

(LED)) and any other components associated with the generation, management and distribution of power in portable devices.

[0088] In some embodiments, the software components include an operating system **632**, a communication module (or set of instructions) **634**, a contact/motion module (or set of instructions) **638**, a graphics module (or set of instructions) **640**, a user interface state module (or set of instructions) **644**, and one or more applications (or set of instructions) **646**.

[0089] The operating system **632** (e.g., Darwin, RTXC, LINUX, UNIX, OS X, WINDOWS, or an embedded operating system such as VxWorks) includes various software components and/or drivers for controlling and managing general system tasks (e.g., memory management, storage device control, power management, etc.) and facilitates communication between various hardware and software components.

[0090] The communication module **634** facilitates communication with other devices over one or more external ports **648** and also includes various software components for handling data received by the RF circuitry **612** and/or the external port **648**. The external port **648** (e.g., Universal Serial Bus (USB), FIREWIRE, etc.) is adapted for coupling directly to other devices or indirectly over a network (e.g., the Internet, wireless LAN, etc.).

[0091] The contact/motion module **638** detects contact with the touch screen **626**, in conjunction with the touch-screen controller **622**. The contact/motion module **638** includes various software components for performing various operations related to detection of contact with the touch screen **622**, such as determining if contact has occurred, determining if there is movement of the contact and tracking the movement across the touch screen, and determining if the contact has been broken (i.e., if the contact has ceased). Determining movement of the point of contact may include determining speed (magnitude), velocity (magnitude and direction), and/or an acceleration (including magnitude and/or direction) of the point of contact. In some embodiments, the contact/motion module **626** and the touch screen controller **622** also detects contact on the touchpad.

[0092] The graphics module **640** includes various known software components for rendering and displaying graphics on the touch screen **626**. Note that the term "graphics" includes any object that can be displayed to a user, including without limitation text, web pages, icons (such as user-interface objects including soft keys), digital images, videos, animations and the like.

[0093] In some embodiments, the graphics module **640** includes an optical intensity module **642**. The optical intensity module **642** controls the optical intensity of graphical objects, such as user-interface objects, displayed on the touch screen **626**. Controlling the optical intensity may include increasing or decreasing the optical intensity of a graphical object. In some embodiments, the increase or decrease may follow predefined functions.

[0094] The user interface state module **644** controls the user interface state of the device **600**. The user interface state module **644** may include a lock module **650** and an unlock module **652**. The lock module detects satisfaction of any of one or more conditions to transition the device **600** to a user-interface lock state and to transition the device **600** to the lock state. The unlock module detects satisfaction of any of one or more conditions to transition the device to a user-interface unlock state and to transition the device **600** to the unlock state.

[0095] The one or more applications **630** can include any applications installed on the device **600**, including without limitation, a browser, address book, contact list, email, instant messaging, word processing, keyboard emulation, widgets, JAVA-enabled applications, encryption, digital rights management, voice recognition, voice replication, location determination capability (such as that provided by the global positioning system (GPS)), a music player (which plays back recorded music stored in one or more files, such as MP3 or AAC files), etc. Client-side payment application **120** may also be installed on device **600**.

[0096] FIG. **7**A illustrates a block diagram of an example registration process **700** used to create a user identity record **301** according to some embodiments. In one embodiment, process **700** begins with the user requesting client-side payment application **120** from transaction processor **170** for execution on mobile device **135** (**710**). Transaction processor **170** pushes or otherwise provisions client-side payment application **120** to mobile device **135**, e.g., using a mobile communications network (**720**). Once executing on mobile device **135**, client-side payment application **120** obtains an identifier associated with user **105** (**730**). In one embodiment, client-side payment application **120** does not require user **105** to create or otherwise log in to client-side payment application **120**. Instead, client-side payment application **120** determines provisioned identifiers for the user **105** (**732**) based on the user's active sessions, e.g., with social networking accounts, email accounts, etc., running on mobile device **135**. In another embodiment, where the user **105** does not participate in such sessions, e.g., with social networking accounts, email accounts, etc., the user **105** may create a user name and password with which to log into client-side payment application **120** (**734**), and this user name and password can be used as the identifier associated with user **105**. Client-side payment application **120** transmits the one or more identifiers for the user **105** to transaction processor **170**, which creates a record **301** for user **105** associating the mobile device identifier for mobile device **135** and the one or more user identifiers together (**750**). Transaction processor **170** may subsequently modify or update user record **301** based e.g., on transactions completed by the user **105**, or as user identifier **311** data changes. User **105** may optionally provide user preference data (e.g., preferred shipping address, preferred payment method information, etc.) during (or subsequent to) the registration process.

[0097] FIG. **7**B illustrates a block diagram of a process **800** which may lead up to process **700** discussed with reference to FIG. **7**A. In particular, process **800** may lead to the user **105** requesting client-side payment application **120** from transaction processor **170** for execution on mobile device **135** (**710**).

[0098] Process **800** starts with executable code within "Buy button" **415** obtaining one or more identifiers associated with user **105** (**810**). In one embodiment, "Buy Button" **415** obtains the identifiers in response to the user **105** selecting a "Buy Button" **415** (**810**) to purchase an object for sale, e.g., as part of an advertisement, or a twitter feed, or a retail store, etc., using user device **110** (**812**). In another embodiment, "Buy Button" **415** obtains the identifiers even before the user **105** selects the "Buy Button" **415** in a pre-emptive manner (**814**). In an embodiment in which "Buy Button" **415** is embedded or otherwise integrated into advertisement content (e.g., content **416**), pre-emptive identification of the user can be used to personalize the advertisement content (e.g., **416**), e.g., by displaying a greeting to the user **105**. An example

screenshot, as illustrated in FIG. **41**, advertisement content **416** includes Buy Button **415**, and a personalized promotional message **418** to user **105**.

[0099] In one embodiment, the user is not required to create or otherwise log into an account associated with the provider of the object for sale. Instead, "Buy button" **415** or an external identity provider as requested by "Buy Button" **415** determines provisioned identifiers for the user **105** (**822**) based on the user's active sessions, e.g., with social networking accounts, email accounts, etc., running on user device **110**. In another embodiment, when there are no such active sessions, the user **105** may provide a user name and password with which to log into an account with server-side payment application **120** (**824**), and this user name and password can be used as the identifier associated with user **105**.

[0100] Code within "Buy Button" **415** transmits the user identifier to transaction processor **170** (**830**), which performs a lookup to see if there is a user record **301** in database **180**. If no record exits, user **105** is requested to register with Server-side payment application **175** and install client-payment application **120** on mobile device **135**.

[0101] While the above description contains many specifics and certain exemplary embodiments have been described and shown in the accompanying drawings, it is to be understood that such embodiments are merely illustrative of and not restrictive on the broad invention, and that this invention not be limited to the specific constructions and arrangements shown and described, since various other modifications may occur to those ordinarily skilled in the art, as mentioned above. The invention includes any combination or sub-combination of the elements from the different species and/or embodiments disclosed herein.

1. A method for enabling a financial transaction, comprising:

at a transaction processing server:

receiving an indication from a user to conduct the financial transaction;

in response to receiving the indication from the user, determining an identity associated with the user;

determining a mobile device identifier associated with the determined identity, the mobile device identifier identifying a mobile device authorized by the user for completing the financial transaction;

upon determining the mobile device identifier, sending a request to the mobile device associated with the mobile device identifier for the user to provide user input into the mobile device;

receiving, from the mobile device, an indication that the requested user input was provided at the mobile device; and

in response to receiving the indication, enabling the financial transaction.

2. The method of claim **1**, wherein the request for user input includes a request for depressing a soft key.

3. The method of claim **1**, wherein the request for user input includes a request for completion of a touch screen gesture.

4. The method of claim **1**, wherein the request for user input includes a request for entry of a password.

5. The method of claim **1**, wherein the request for user input includes a request for entry of a secret pin.

6. The method of claim **1**, wherein the identity is determined based on a user identifier associated with a current user session with a respective web site.

7. The method of claim **6**, further comprising:

in response to receiving the indication that the requested user input was provided at the mobile device, transmitting a request for user identity verification and transaction authorization to the mobile device; and

in response to receiving a user response to the user identity verification and transaction authorization request, processing the transaction.

8. The method of claim **7**, wherein the request for user identity verification and transaction authorization includes a request for entry of a password.

9. The method of claim **7**, wherein the request for user identity verification and transaction authorization includes a request for entry of a secret pin.

10. The method of claim **7**, wherein the request for user input includes a request for completion of a touch screen gesture and the request for user identity verification and transaction authorization includes a request for entry of a password.

11. The method of claim **7**, wherein the request for user identity verification and transaction authorization includes a request for biometrics authentication information.

12. A method for enabling a financial transaction, comprising:

at a transaction processing server:

receiving an indication from a user to conduct the financial transaction;

in response to receiving the indication from the user, determining an identity associated with the user;

sending a first request to a mobile device associated with the determined identity to provide user input into the mobile device, wherein the first request includes a request for completion of a physical act on the mobile device by the user;

receiving an indication that the first request was completed at the mobile device;

sending a second request to the mobile device associated with the identity to provide user input, wherein the second request includes a request for entry of user authentication information into the mobile device; and

in response to receiving the user information, enabling the financial transaction.

13. The method of claim **12**, wherein the first request for user input includes a request for depressing a soft key.

14. The method of claim **12**, wherein the first request for user input includes a request for completion of a touch screen gesture.

15. The method of claim **12**, wherein the second request for user input includes a request for entry of a password.

16. The method of claim **12**, wherein the second request for user input includes a request for biometrics authentication information.

17. The method of claim **12**, wherein the identity is determined based on a user identifier associated with a current user session with a respective web site.

18. The method of claim **12**, wherein the request for user input includes a request for completion of a touch screen gesture and the request for user identity verification and transaction authorization includes a request for entry of a password.

19. A method for enabling a financial transaction requested by a user, comprising:

at a server,

transmitting web content for rendering on a user device by a browser application executing at the user device, wherein an identity of the user is unknown, the web content including:

information about one or more products, and

checkout module for providing a user interface to enter an indication that

a user wishes to conduct the financial transaction;

receiving the indication for the user to conduct the financial transaction from the user device; and

in response to receiving the indication from the user, authorizing the financial transaction using a mobile device associated with the user, the authorizing including:

determining the identity associated with the user,

determining a mobile device identifier associated with the determined identity, the mobile device identifier identifying a mobile device authorized by the user for completing the financial transaction,

upon determining the mobile device identifier, sending a request to the mobile device associated with the mobile device identifier for the user to provide user input into the mobile device,

receiving, from the mobile device, an indication that the requested user input was provided at the mobile device, and

in response to receiving the indication, enabling the financial transaction.

20. The method of claim **19**, wherein the request for user input includes a request for depressing a soft key.

21. The method of claim **19**, wherein the request for user input includes a request for completion of a touch screen gesture.

22. The method of claim **19**, wherein the request for user input includes a request for entry of a password.

23. The method of claim **19**, wherein the request for user input includes a request for entry of a secret pin.

24. The method of claim **19**, wherein the identity is determined based on one a user identifier associated with a current user session with a respective web site.

25. The method of claim **24**, further comprising:

in response to receiving the indication that the requested user input was provided at the mobile device, transmitting a request for user identity verification and transaction authorization to the mobile device; and

in response to receiving a user response to the user identity verification and transaction authorization, processing the transaction.

26. The method of claim **25**, wherein the request for user identity verification and transaction authorization includes a request for entry of a password.

27. The method of claim **25**, wherein the request for user identity verification and transaction authorization includes a request for entry of a secret pin.

28. The method of claim **25**, wherein the request for user input includes a request for completion of a touch screen gesture and the request for transaction authorization includes a request for entry of a password.

29. The method of claim **25**, wherein the request for user identity verification and transaction authorization includes a request for biometrics authentication.

30. The method of claim **19**, wherein the web content further includes advertisement content, and wherein the advertisement content comprises the checkout module.

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