US008620754B2

(12) **United States Patent**
Fisher

(10) **Patent No.:** **US 8,620,754 B2**
(45) **Date of Patent:** ***Dec. 31, 2013**

(54) **REMOTE TRANSACTION PROCESSING USING AUTHENTICATION INFORMATION**

(71) Applicant: **Blaze Mobile, Inc.**, Berkeley, CA (US)

(72) Inventor: **Michelle Fisher**, Oakland, CA (US)

(73) Assignee: **Blaze Mobile, Inc.**, Berkeley, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 21 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **13/735,337**

(22) Filed: **Jan. 7, 2013**

(65) **Prior Publication Data**

US 2013/0124289 A1 May 16, 2013

Related U.S. Application Data

(63) Continuation of application No. 11/948,903, filed on Nov. 30, 2007, now Pat. No. 8,352,323.

(51) **Int. Cl.**
G06Q 20/00	(2012.01)
G06Q 40/00	(2012.01)
G07F 19/00	(2006.01)
G06Q 20/20	(2012.01)
H04N 21/81	(2011.01)

(52) **U.S. Cl.**
CPC ***G06Q 20/20*** (2013.01); ***G06Q 20/206*** (2013.01); *G06Q 40/10* (2013.01); *H04N 21/812* (2013.01)
USPC **705/16**; 705/18; 705/30; 705/40; 705/41; 705/44; 705/14.1; 705/14.17; 705/26.1; 725/23; 725/34; 725/35

(58) **Field of Classification Search**
CPC G06Q 20/20; G06Q 20/206; G06Q 40/10; G06Q 20/105; G06Q 20/40; H04M 1/72522; H04N 21/812

USPC 705/16, 18, 30, 40, 41, 44; 725/9, 23, 725/35; 455/556.1
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

| 6,038,367 | A | | 3/2000 | Abecassis |
| 6,101,483 | A | * | 8/2000 | Petrovich et al. .... 705/21 |

(Continued)

FOREIGN PATENT DOCUMENTS

| WO | WO 2006095212 A1 * | 9/2006 | .... H04M 11/00 |
| WO | WO 2006095212 A1 | 9/2006 | |

OTHER PUBLICATIONS

U.S. Appl. No. 11/933,337, Office Action mailed May 27, 2010, 9 p.

(Continued)

Primary Examiner — Matthew Gart
Assistant Examiner — Olusegun Goyea

(57) **ABSTRACT**

A method and system for conducting an online payment transaction through a point of sale device. The method includes receiving input from a user selecting an item for purchase through the point of sale device; calculating a total purchase amount for the item in response to a request from the user to purchase the item; and sending payment authorization for the total purchase amount from the point of sale device to a payment entity, in which the payment authorization is sent to the payment entity via a mobile communication device of the user. The method further includes receiving a result of the payment authorization from the payment entity through the mobile communication device; and completing the payment transaction based on the result of the payment authorization.
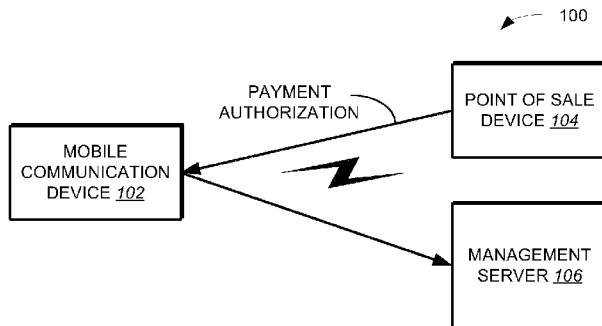
20 Claims, 4 Drawing Sheets

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,115,601 A *	9/2000	Ferreira	455/406
6,123,259 A *	9/2000	Ogasawara	235/380
6,128,655 A	10/2000	Fields	
6,141,666 A	10/2000	Tobin	
6,199,082 B1	3/2001	Ferrel	
6,250,557 B1 *	6/2001	Forslund et al.	235/492
6,415,156 B1	7/2002	Stadelmann	
6,450,407 B1 *	9/2002	Freeman et al.	235/492
6,587,835 B1 *	7/2003	Treyz et al.	705/14.64
6,605,120 B1	8/2003	Fields	
6,771,981 B1	8/2004	Zalewski	
6,772,396 B1	8/2004	Cronin	
6,886,017 B1	4/2005	Jackson	
6,950,939 B2	9/2005	Tobin	
7,031,945 B1	4/2006	Donner	
7,069,248 B2	6/2006	Huber	
7,096,003 B2	8/2006	Joao	
7,110,744 B2	9/2006	Freeny	
7,110,792 B2 *	9/2006	Rosenberg	455/558
7,127,236 B2	10/2006	Khan	
7,200,578 B2 *	4/2007	Paltenghe et al.	705/74
7,289,810 B2	10/2007	Jagadeesan	
7,308,254 B1	12/2007	Rissanen	
7,357,312 B2	4/2008	Gangi	
7,379,920 B2	5/2008	Leung	
7,383,226 B2 *	6/2008	Kight et al.	705/40
7,472,829 B2	1/2009	Brown	
7,482,925 B2	1/2009	Hammad	
7,512,567 B2 *	3/2009	Bemmel et al.	705/67
7,522,905 B2	4/2009	Hammad	
7,783,532 B2 *	8/2010	Hsu et al.	705/28
7,784,684 B2 *	8/2010	Labrou et al.	235/380
7,818,284 B1 *	10/2010	Walker et al.	705/26.2
7,827,056 B2 *	11/2010	Walker et al.	705/14.23
7,831,520 B2 *	11/2010	Mengerink	705/64
7,870,077 B2 *	1/2011	Woo et al.	705/78
7,979,519 B2 *	7/2011	Shigeta et al.	709/223
8,005,426 B2 *	8/2011	Huomo et al.	455/41.2
8,019,362 B2 *	9/2011	Sweatman et al.	455/466
8,073,424 B2 *	12/2011	Sun et al.	455/406
8,086,534 B2 *	12/2011	Powell	705/44
8,109,444 B2 *	2/2012	Jain	235/492
8,121,945 B2	2/2012	Rackley	
8,127,984 B2 *	3/2012	Zatloukal et al.	235/380
8,214,454 B1 *	7/2012	Barnes et al.	709/217
8,429,030 B2 *	4/2013	Walker et al.	705/26.7
8,429,031 B2 *	4/2013	Walker et al.	705/26.7
8,438,077 B2 *	5/2013	Walker et al.	705/26.7
8,438,078 B2 *	5/2013	Walker et al.	705/26.7
8,467,766 B2 *	6/2013	Rackley et al.	455/406
8,489,067 B2 *	7/2013	Rackley et al.	455/406
8,510,220 B2 *	8/2013	Rackley et al.	705/40
2001/0011250 A1 *	8/2001	Paltenghe et al.	705/41
2001/0027413 A1 *	10/2001	Bhutta	705/14
2001/0044751 A1 *	11/2001	Pugliese et al.	705/26
2002/0056091 A1 *	5/2002	Bala et al.	725/34
2002/0059100 A1	5/2002	Shore	
2002/0063895 A1	5/2002	Agata	
2002/0065774 A1 *	5/2002	Young et al.	705/41
2002/0072931 A1 *	6/2002	Card	705/1
2002/0077918 A1	6/2002	Lerner	
2002/0082879 A1	6/2002	Miller	
2002/0107756 A1	8/2002	Hammons	
2002/0116269 A1 *	8/2002	Ishida	705/14
2002/0160761 A1 *	10/2002	Wolfe	455/414
2002/0169664 A1 *	11/2002	Walker et al.	705/14
2002/0169984 A1	11/2002	Kumar	
2003/0061113 A1 *	3/2003	Petrovich et al.	705/26
2003/0065805 A1	4/2003	Barnes	
2003/0074259 A1 *	4/2003	Slyman et al.	705/14
2003/0085286 A1 *	5/2003	Kelley et al.	235/492
2003/0087601 A1 *	5/2003	Agam et al.	455/39
2003/0093695 A1	5/2003	Dutta	
2003/0105641 A1	6/2003	Lewis	
2003/0115111 A1 *	6/2003	Fisher	705/26

2003/0132298 A1 *	7/2003	Swartz et al.	235/472.02
2003/0140004 A1	7/2003	O'Leary	
2003/0163359 A1 *	8/2003	Kanesaka	705/8
2003/0172028 A1	9/2003	Abell	
2004/0006497 A1	1/2004	Nestor	
2004/0030658 A1	2/2004	Cruz	
2004/0034544 A1	2/2004	Fields	
2004/0064407 A1 *	4/2004	Kight et al.	705/40
2004/0064408 A1 *	4/2004	Kight et al.	705/40
2004/0064409 A1 *	4/2004	Kight et al.	705/40
2004/0064410 A1 *	4/2004	Kight et al.	705/40
2004/0073497 A1 *	4/2004	Hayes et al.	705/27
2004/0078329 A1 *	4/2004	Kight et al.	705/40
2004/0083167 A1 *	4/2004	Kight et al.	705/40
2004/0093271 A1 *	5/2004	Walker et al.	705/14
2004/0111320 A1 *	6/2004	Schlieffers et al.	705/16
2004/0111360 A1 *	6/2004	Albanese	705/38
2004/0127256 A1 *	7/2004	Goldthwaite et al.	455/558
2004/0235450 A1 *	11/2004	Rosenberg	455/406
2004/0243519 A1	12/2004	Perttila	
2004/0254836 A1 *	12/2004	Emoke Barabas et al.	705/14
2004/0267618 A1	12/2004	Judicibus	
2004/0267665 A1	12/2004	Nam	
2005/0003810 A1	1/2005	Chu	
2005/0040230 A1 *	2/2005	Swartz et al.	235/383
2005/0043994 A1 *	2/2005	Walker et al.	705/14
2005/0075927 A1 *	4/2005	Nash	705/14
2005/0076210 A1	4/2005	Thomas	
2005/0144071 A1 *	6/2005	Monahan et al.	705/14
2005/0165646 A1 *	7/2005	Tedesco et al.	705/14
2005/0187873 A1 *	8/2005	Labrou et al.	705/40
2005/0187883 A1 *	8/2005	Bishop et al.	705/67
2005/0215231 A1	9/2005	Bauchot	
2005/0234779 A1 *	10/2005	Chiu et al.	705/24
2006/0031752 A1 *	2/2006	Surloff et al.	715/501.1
2006/0089874 A1 *	4/2006	Newman et al.	705/14
2006/0143091 A1 *	6/2006	Yuan et al.	705/26
2006/0165060 A1 *	7/2006	Dua	370/352
2006/0191995 A1 *	8/2006	Stewart et al.	235/379
2006/0206709 A1 *	9/2006	Labrou et al.	713/167
2006/0218092 A1 *	9/2006	Tedesco et al.	705/40
2006/0219780 A1 *	10/2006	Swartz et al.	235/383
2006/0287920 A1 *	12/2006	Perkins et al.	705/14
2006/0294025 A1 *	12/2006	Mengerink	705/77
2007/0004391 A1	1/2007	Maffeis	
2007/0011099 A1 *	1/2007	Sheehan	705/65
2007/0022058 A1 *	1/2007	Labrou et al.	705/67
2007/0095892 A1	5/2007	Lyons	
2007/0125838 A1 *	6/2007	Law et al.	235/379
2007/0125840 A1 *	6/2007	Law et al.	235/379
2007/0138299 A1 *	6/2007	Mitra	235/492
2007/0156436 A1 *	7/2007	Fisher et al.	705/1
2007/0174490 A1 *	7/2007	Choi et al.	709/246
2007/0179883 A1 *	8/2007	Questembert	705/39
2007/0210155 A1 *	9/2007	Swartz et al.	235/383
2007/0235519 A1	10/2007	Jang	
2007/0255662 A1	11/2007	Tumminaro	
2007/0270166 A1 *	11/2007	Hampel et al.	455/456.3
2007/0293155 A1 *	12/2007	Liao et al.	455/41.2
2008/0004952 A1 *	1/2008	Koli	705/14
2008/0006685 A1 *	1/2008	Rackley, III et al.	235/379
2008/0010190 A1 *	1/2008	Rackley, III et al.	705/39
2008/0010191 A1 *	1/2008	Rackley, III et al.	705/39
2008/0010192 A1 *	1/2008	Rackley, III et al.	705/39
2008/0010193 A1 *	1/2008	Rackley, III et al.	705/39
2008/0010196 A1 *	1/2008	Rackley, III et al.	705/40
2008/0010204 A1 *	1/2008	Rackley, III et al.	705/45
2008/0010215 A1 *	1/2008	Rackley, III et al.	705/70
2008/0017704 A1 *	1/2008	VanDeburg et al.	235/380
2008/0027795 A1 *	1/2008	Medlin et al.	705/14
2008/0040265 A1 *	2/2008	Rackley, III et al.	705/40
2008/0045172 A1 *	2/2008	Narayanaswami et al.	455/187.1
2008/0046366 A1	2/2008	Bemmel	
2008/0048022 A1 *	2/2008	Vawter	235/380
2008/0051059 A1 *	2/2008	Fisher	455/410
2008/0051142 A1 *	2/2008	Calvet et al.	455/558
2008/0052192 A1 *	2/2008	Fisher	705/26
2008/0052233 A1 *	2/2008	Fisher et al.	705/40

(56) References Cited

U.S. PATENT DOCUMENTS

2008/0059329 A1*	3/2008	Luchene et al.	705/26
2008/0078831 A1*	4/2008	Johnson et al.	235/380
2008/0126145 A1*	5/2008	Rackley, III et al.	705/7
2008/0133336 A1*	6/2008	Altman et al.	705/10
2008/0139155 A1	6/2008	Boireau	
2008/0140520 A1*	6/2008	Hyder et al.	705/14
2008/0148040 A1*	6/2008	Machani et al.	713/150
2008/0167017 A1*	7/2008	Wentker et al.	455/414.1
2008/0167961 A1*	7/2008	Wentker et al.	705/14
2008/0167988 A1*	7/2008	Sun et al.	705/39
2008/0177668 A1	7/2008	Delean	
2008/0207234 A1*	8/2008	Arthur et al.	455/466
2008/0208681 A1	8/2008	Hammad	
2008/0208743 A1*	8/2008	Arthur et al.	705/41
2008/0208744 A1*	8/2008	Arthur et al.	705/41
2008/0208762 A1*	8/2008	Arthur et al.	705/79
2008/0221997 A1*	9/2008	Wolfe	705/14
2008/0235278 A1*	9/2008	Piepenbrink et al.	707/104.1
2008/0242274 A1*	10/2008	Swanburg et al.	455/414.1
2008/0248781 A1*	10/2008	Cedo Perpinya et al.	455/412.1
2008/0249938 A1*	10/2008	Drake-Stoker	705/44
2008/0255947 A1*	10/2008	Friedman	705/14
2008/0262928 A1*	10/2008	Michaelis	705/14
2008/0274794 A1*	11/2008	Mathieson	463/25
2008/0275779 A1*	11/2008	Lakshminarayanan	705/14
2008/0294556 A1	11/2008	Anderson	
2008/0305774 A1	12/2008	Ramakrishna	
2008/0308628 A1*	12/2008	Payne et al.	235/381
2009/0018913 A1*	1/2009	Sarukkai et al.	705/14
2009/0061884 A1*	3/2009	Rajan et al.	455/445
2009/0063312 A1*	3/2009	Hurst	705/30
2009/0076912 A1*	3/2009	Rajan et al.	705/14
2009/0098825 A1	4/2009	Huomo	
2009/0106112 A1*	4/2009	Dalmia et al.	705/14
2009/0112747 A1*	4/2009	Mullen et al.	705/35
2009/0124234 A1*	5/2009	Fisher et al.	455/406
2009/0132362 A1*	5/2009	Fisher et al.	705/14
2009/0143104 A1*	6/2009	Loh et al.	455/558
2009/0144161 A1*	6/2009	Fisher	705/16
2009/0177587 A1*	7/2009	Siegal et al.	705/67
2009/0227281 A1*	9/2009	Hammad et al.	455/550.1
2010/0057619 A1*	3/2010	Weller et al.	705/67
2010/0063895 A1*	3/2010	Dominguez et al.	705/26
2010/0145835 A1*	6/2010	Davis et al.	705/30
2011/0055038 A1*	3/2011	Mengerink	705/26.1
2011/0212751 A1*	9/2011	Havens et al.	455/556.1
2011/0320316 A1*	12/2011	Randazza et al.	705/26.43
2012/0030044 A1*	2/2012	Hurst	705/18
2012/0150744 A1*	6/2012	Carlson et al.	705/44
2012/0220314 A1*	8/2012	Altman et al.	455/456.3
2012/0265677 A1*	10/2012	Rackley et al.	705/41
2013/0013501 A1*	1/2013	Rackley et al.	705/41
2013/0054470 A1*	2/2013	Campos et al.	705/67
2013/0212016 A1*	8/2013	Davis et al.	705/42

OTHER PUBLICATIONS

U.S. Appl. No. 11/933,351, Office Action mailed Oct. 3, 2008, 5 p.

U.S. Appl. No. 11/933,367, Office Action mailed May 27, 2010, 8 p.

U.S. Appl. No. 11/467,441, Office Action mailed May 27, 2009, 17 p.

U.S. Appl. No. 12/592,581, Office Action mailed Jun. 4, 2010, 20 p.

U.S. Appl. No. 11/933,351, Office Action mailed Jul. 8, 2009, 7 p.

U.S. Appl. No. 11/939,821, Office Action mailed Aug. 17, 2010, 11 p.

U.S. Appl. No. 11/933,351, Office Action mailed Aug. 18, 2010, 16 p.

U.S. Appl. No. 11/933,321, Office Action mailed May 27, 2010, 11 p.

Deena, M. Amato, "Mobile Rewards." Chain Store Age 82.5 (2006): 160, 161, 163. Hoover's Company Profiles; ProQuest Central. Web. Oct. 5, 2012.

"ViVOtech to Demonstrate Industry's First End-to-End Near Field Communication (NFC) Solution at the NRF Show." Business Wire: 1 Jan. 16, 2006. Business Dateline; Hoover's Company Profiles; ProQuest Central. Web. Oct. 5, 2012.
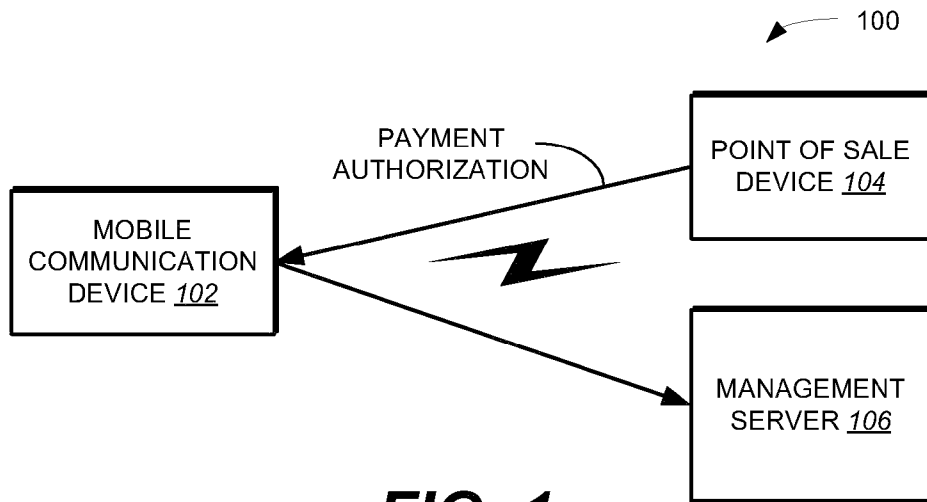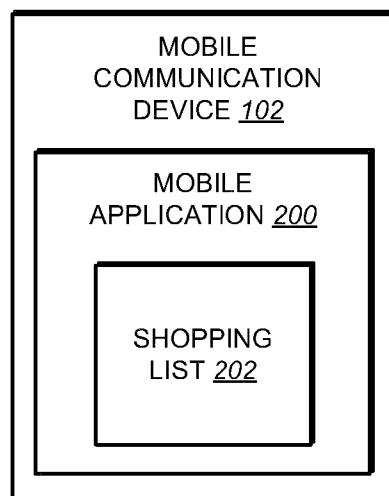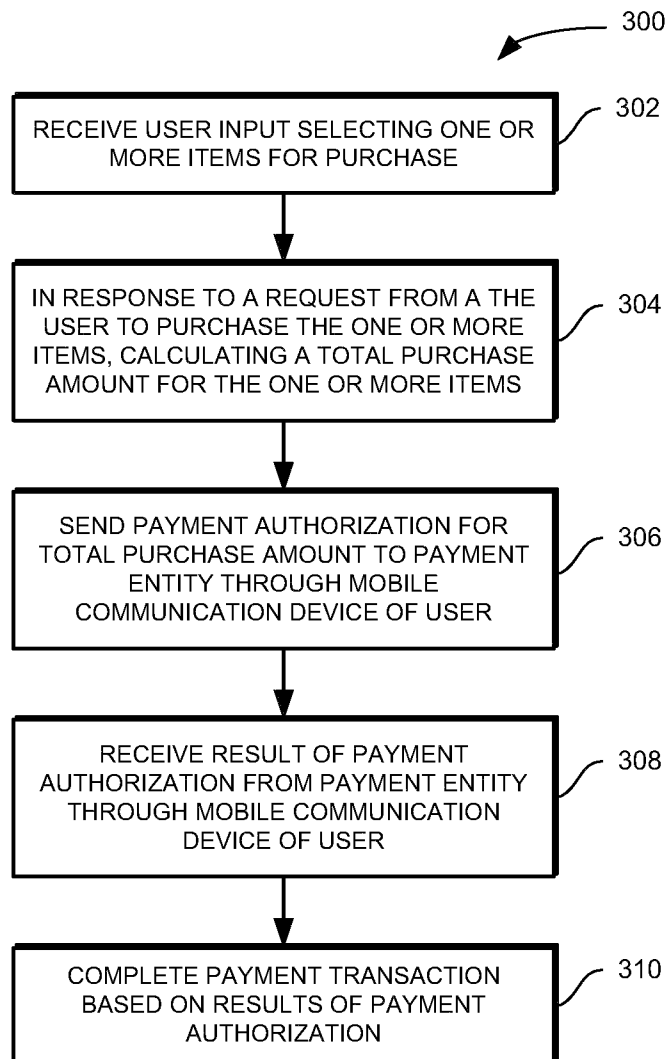
* cited by examiner

100

PAYMENT
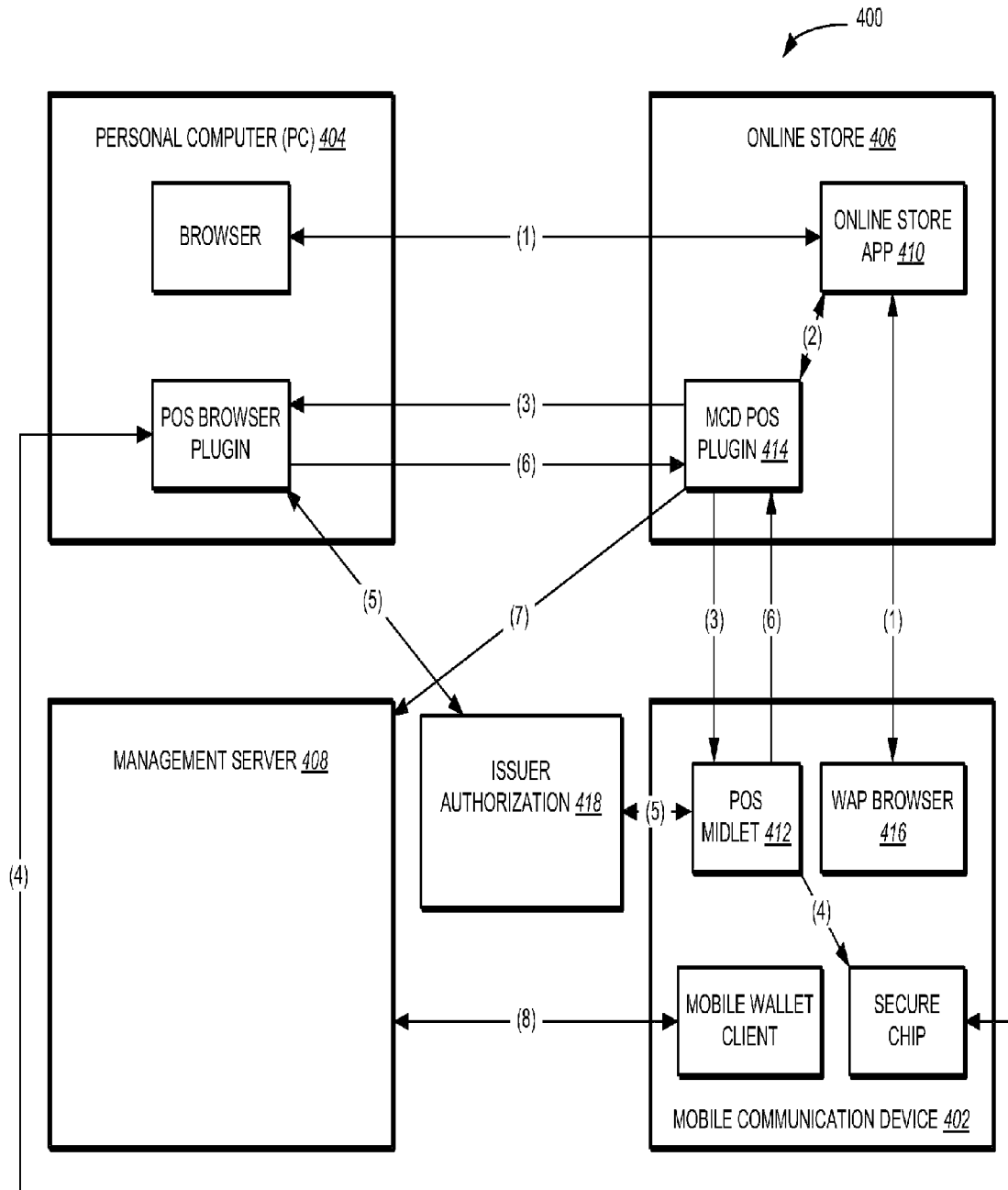AUTHORIZATION

POINT OF SALE
DEVICE *104*

MOBILE
COMMUNICATION
DEVICE *102*

MANAGEMENT
SERVER *106*

FIG. 1

MOBILE
COMMUNICATION
DEVICE *102*

MOBILE
APPLICATION *200*

SHOPPING
LIST *202*

FIG. 2

300

302

RECEIVE USER INPUT SELECTING ONE OR
MORE ITEMS FOR PURCHASE

304

IN RESPONSE TO A REQUEST FROM A THE
USER TO PURCHASE THE ONE OR MORE
ITEMS, CALCULATING A TOTAL PURCHASE
AMOUNT FOR THE ONE OR MORE ITEMS

306

SEND PAYMENT AUTHORIZATION FOR
TOTAL PURCHASE AMOUNT TO PAYMENT
ENTITY THROUGH MOBILE
COMMUNICATION DEVICE OF USER

308

RECEIVE RESULT OF PAYMENT
AUTHORIZATION FROM PAYMENT ENTITY
THROUGH MOBILE COMMUNICATION
DEVICE OF USER

310

COMPLETE PAYMENT TRANSACTION
BASED ON RESULTS OF PAYMENT
AUTHORIZATION

FIG. 3

400

PERSONAL COMPUTER (PC) 404

BROWSER

POS BROWSER PLUGIN

ONLINE STORE 406

ONLINE STORE APP 410

MCD POS PLUGIN 414

(1)

(2)

(3)

(6)

MANAGEMENT SERVER 408

ISSUER AUTHORIZATION 418

(5)

(7)

(3)

(6)

(1)

MOBILE COMMUNICATION DEVICE 402

POS MIDLET 412

WAP BROWSER 416

(5)

(4)

(4)

MOBILE WALLET CLIENT

SECURE CHIP

(8)

FIG. 4

FIG. 5

REMOTE TRANSACTION PROCESSING USING AUTHENTICATION INFORMATION

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of application Ser. No. 11/948,903, filed Nov. 30, 2007, titled METHOD AND SYSTEM FOR CONDUCTING AN ONLINE PAYMENT TRANSACTION USING A MOBILE COMMUNICATION DEVICE, all of which is incorporated by reference herein in its entirety.

FIELD OF INVENTION

The present invention relates to data communications and wireless devices.

BACKGROUND OF THE INVENTION

Mobile communication devices—e.g., cellular phones, personal digital assistants, and the like—are increasingly being used to conduct payment transactions as described in U.S. patent application Ser. No. 11/933,351, entitled "Method and System For Scheduling A Banking Transaction Through A Mobile Communication Device", and U.S. patent application Ser. No. 11/467,441, entitled "Method and Apparatus For Completing A Transaction Using A Wireless Mobile Communication Channel and Another Communication Channel, both of which are incorporated herein by reference. Such payment transactions can include, for example, purchasing goods and/or services, bill payments, and transferring funds between bank accounts.

BRIEF SUMMARY OF THE INVENTION

In general, this specification describes a method and system for conducting an online payment transaction through a point of sale device. The method includes receiving input from a user selecting an item for purchase through the point of sale device; calculating a total purchase amount for the item in response to a request from the user to purchase the item; and sending payment authorization for the total purchase amount from the point of sale device to a payment entity, in which the payment authorization is sent to the payment entity via a mobile communication device of the user. The method further includes receiving a result of the payment authorization from the payment entity through the mobile communication device; and completing the payment transaction based on the result of the payment authorization.

Particular implementations can include one or more of the following features. The point of sale device can be a desktop computer, a laptop computer, or a terminal. The mobile communication device can be a cellular phone, a wireless personal digital assistant (PDA), or a laptop computer. The cellular phone can be an NFC-enabled phone. Sending payment authorization for the total purchase amount from the point of sale device to a payment entity can include sending the payment authorization securely to the payment entity. The payment entity can be a person, a computer system, or a bank. The method can further include maintaining a shopping list on the mobile communication device of the user, in which the shopping list includes a listing of one or more items to be purchased by the user. The payment authorization can be an authorization for payment with a credit card, a debit card, or a prepaid card.

The details of one or more implementations are set forth in the accompanying drawings and the description below. Other features and advantages will be apparent from the description and drawings, and from the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates a block diagram of a communication system including a wireless mobile communication device and a management server in accordance with one implementation.

FIG. 2 illustrates one implementation of the wireless mobile communication device of FIG. 1.

FIG. 3 is a method for conducting a payment transaction using a point of sale device in accordance with one implementation.

FIG. 4 illustrates a block diagram of a communication system including a wireless mobile communication device and an online store in accordance with one implementation.

FIG. 5 is a block diagram of a data processing system suitable for storing and/or executing program code in accordance with one implementation.

Like reference symbols in the various drawings indicate like elements.

DETAILED DESCRIPTION OF THE INVENTION

FIG. 1 illustrates one implementation of a communication system 100. The communication system 100 includes a hand-held, wireless mobile communication device 102 a point-of-sale device 104 and a management server 106. In one implementation, the mobile communication device 102 includes a mobile application (discussed in greater detail below) that permits a user of the mobile communication device 102 to conduct payment transactions. Payment transactions can include, for example, using contactless payment technology at a retail merchant point of sale (e.g., through point of sale device 104), using mobile/internet commerce (e.g., purchase tickets and products, etc.), storage of payment information and other digital artifacts (e.g., receipts, tickets, coupons, etc.), storage of banking information (payment account numbers, security codes, PIN's, etc.), and accessing banking service (account balance, payment history, bill pay, fund transfer, etc.), and so on. The mobile communication device 102 can be a cellular phone, a wireless personal digital assistant (PDA), a laptop computer, or other wireless communication device. The point of sale device 104 can be a desktop computer, laptop computer, terminal, or other device that is configured to receive user input selecting items for purchase or other transaction.

In one implementation, authorizations for payment transactions that are made through the point of sale device 104 are sent from the point of sale device 104 to an issuer authorization (e.g., management server 106) through the mobile communication device 102 (as shown in FIG. 1). In one implementation, an issuer authorization is a payment entity that either approves or disapproves a payment transaction. An issuer authorization can be, e.g., a person, computer system, bank (or other third party). One potential benefit of having payment authorizations flow through the mobile communication device 102 is that sensitive user information (e.g. account numbers, pin numbers, and/or identity information) need only be sent from the mobile communication device 102 directly to an issuer authorization. Such operation reduces the potential for identity theft and/or fraudulent purchases made through a point of sale device. For example, (in one imple-

mentation) payment authorizations cannot be sent to an issuer authorization if the mobile communication device 102 is turned off.

FIG. 2 illustrates one implementation of the mobile communication device 102. The mobile communication device 102 includes a mobile application 200 that (in one implementation) is provided to the mobile communication device 102 through a remote server (e.g., management server 106). In one implementation, the mobile application is a Mobile Wallet application available from Mobile Candy Dish, Inc., of Alameda, Calif. In one implementation, the mobile application is a hosted service, as described in U.S. patent application Ser. No. 11/939,821, entitled "Method and System For Securing Transactions Made Through a Mobile Communication Device", which is incorporated herein by reference. In one implementation, the mobile application 200 is configured to send requests to the management server for artifacts based on user input, e.g., received though a keypad (not shown) of the mobile communication device 102. Requests to the management server 106 can also be automated, via proximity-based services, e.g., consumer tapping (or in close proximity) an LBS/contactless/RFID enabled phone against a smart poster (RFID/Bluetooth/LBS enabled, etc.), kiosk, or other device.

In one implementation, the mobile application 200 running on the mobile communication device 102 is configured to receive artifacts (e.g., advertisements, receipts, tickets, coupons, media, content, and so on) from the management server 106. In one implementation, the management server 106 sends artifacts to the mobile application based on user profile information and/or a transaction history (or payment trends) associated with a user of the mobile communication device 102 as described in U.S. patent application Ser. No. 11/944, 267, entitled "Method and System For Delivering Information To a Mobile Communication Device Based On Consumer Transactions", which is incorporated herein by reference.

In one implementation, the mobile communication device 102 is an NFC-enabled phone. The mobile communication device 102 can be NFC-enabled, for example, through an embedded chip or a sticker that is affixed to the cellular phone, as described in U.S. application Ser. No. 11/933,321, entitled "Method and System For Adapting a Wireless Mobile Communication Device For Wireless Transactions", which is incorporated herein by reference. In one implementation, the NFC chip (or sticker) on the cellular phone can be used in conjunction with a merchant's point of sale device as described in greater detail below.

For example, with reference to FIG. 4, in one implementation, the NFC chip (or sticker) on the cellular phone can communicate with NFC chips that are installed on the front of PC's (TV's, Kiosks, or any other device) and serve as scanners/readers. In this implementation a mobile candy dish applet (e.g., MCD POS plugin 414) is installed on the consumer's computer (e.g., PC 404) which interfaces with the NFC chip on the PC. When a consumer (or user) is shopping online and they are ready to pay for their products, the consumer opens his mobile wallet and selects one of the payment methods (e.g., credit card, debit card, prepaid card, etc.) from their mobile wallet. If a default card has been selected already, this step is not necessary. The consumer then waves their phone over the NFC reader present on the PC 404. The consumer's payment credentials are transferred from the phone to the merchant website (e.g., online store application 410) using a communication protocol between the chip in the phone and the chip in the PC, which can be radio frequency for example. If the consumer has coupons in their mobile wallet the consumer can either elect to manually apply the

coupon, save the coupon for a future use (against a larger purchase for example), or have the coupon automatically applied during the transaction and the transaction amount is updated. After the consumer enters any necessary validation information (e.g., pin) to provide a multi-factor authentication and confirms the transaction, the online purchase is processed as normal by the merchant's online processor. The mobile wallet can retrieve transaction data, account balance from the management server 408.

In one implementation, the mobile communication device 102 is a non NFC-enabled phone. In this implementation, the consumer connects his phone to the PC 404 via some non radio frequency method (e.g., IR, Bluetooth, USB cable, etc.). When a consumer is shopping online and they are ready to pay for their products, the consumer opens his mobile wallet and selects one of the payment methods (e.g., credit card, debit card, prepaid card, etc.) from their mobile wallet. If a default card has been selected already, this step is not necessary. The consumer then pushes, e.g., a "Buy now" button and the consumer's payment credentials are transferred from the phone to the merchant website (e.g., online store application 410) using the protocol between the phone and the PC 404 which can be radio frequency, for example. If the consumer has coupons in their mobile wallet the consumer can either elect to manually apply the coupon, save the coupon for a future use, or have the coupon automatically applied during the transaction and the transaction amount is updated. After the consumer enters any necessary validation information (e.g., pin) to provide multi-factor authentication and confirms the transaction, the online purchase is processed as normal by the merchant's online processor. The mobile wallet can retrieve transaction data and account balance from the management server 408.

In one implementation, the management server 408 and merchant portal (e.g., online store 408) are maintained by trusted parties and use an encrypted tunnel to transfer financial data. When the consumer is ready to pay for their online product, they enter their cell phone number on the merchant portal. The merchant portal (which has an MCD applet (e.g., MCD POS plugin 414) installed on its server) securely connects to the management server 408 (that in one implemetation is maintained by Mobile Candy Dish (MCD)). In one implementation, the management server 408 identifies the consumer through their cell phone number, and verifies the consumer's authenticity by sending a unique transaction code to the consumer mobile wallet on their cell phone. The consumer then enters this unique transaction code onto the merchant's web portal. The merchant portal sends this transaction number to the management server 408 for authentication. Upon authentication, the consumer's virtual wallet and payment methods (e.g., credit card, debit card, prepaid card, etc.) are securely retrieved from the management server 408 and are displayed to the consumer in a window on a website associated with the merchant portal. The consumer selects one of these payment methods to pay for their transaction. If a default card has been selected already, this step is not necessary. If the consumer has coupons in their mobile wallet the consumer can either elect to manually apply the coupon, save the coupon for a future use, or have the coupon automatically applied during the transaction and the transaction amount is updated. After the consumer enters any necessary validation information to provide a multi-factor authentication and confirms the transaction, the online purchase is processed as normal by the merchant's online processor. The mobile wallet can retrieve transaction data, account balance from the management server 408.

Referring to FIG. 2, in one implementation, the mobile application 200 maintains a shopping list 202 for a consumer. Accordingly, consumers have the ability to store their shopping list in their mobile wallet and add, delete, or change items on their shopping list either in offline or online mode. In one implementation, consumers are sent coupons based on items on their shopping list, preferences, previous shopping history, proximity to the physical retail store, or a combination of these parameters, as discussed in application Ser. No. 11/944,267, which is incorporated by reference above. If the consumer has coupons in their mobile wallet the consumer can either elect to manually apply the coupon, save the coupon for a future use, or have the coupon automatically applied during the transaction and the transaction amount is updated. When a consumer wants to order the items on their shopping list via an on online merchant (in contrast to a physical retail store), the consumer can logon to the merchant portal and electronically transmit their shopping list to the merchant portal either by waving their phone over NFC enabled PC's or some other connection such as IR, bluetooth, USB, or the like.

FIG. 3 illustrates a method 300 for conducting a payment transaction using a point of sale device (e.g., point of sale device 104). User input is received selecting one or more items for purchase (e.g., at the point of sale device) (step 302). In general, the transaction being made at the point of sale device can be any type of transaction that involves the exchange or transfer of funds—e.g., the transaction can be a payment transaction, a fund transfer, or other type of transaction. In response to a request from the user to purchase the one or more items, a total purchase amount for the one or more items is calculated (e.g., by the point of sale device) (step 304). If the user has coupons in their mobile wallet the user can either manually apply the coupon or have the coupon automatically applied during the transaction and the transaction amount is updated. The user request to purchase an item can be received, e.g., by a user clicking on a "buy now" icon that is displayed on a graphical user interface of the point of sale device. Payment authorization for the total purchase amount is sent to a payment entity through a mobile communication device of the user (step 306). A result of the payment authorization is received at the point of sale device from the payment entity via the mobile communication device (step 308). The payment transaction is completed based on the result of the payment authorization (step 310). If the payment transaction was authorized by the payment entity, then the sale of the items through the point of sale device is completed. Otherwise, if the payment transaction was not authorized by the payment entity, then the point of sale device terminates the payment transaction.

FIG. 4 illustrates an example payment transaction being made in a communication system 400 in accordance with one implementation. The communication system 400 includes a mobile communication device 402, a personal computer (PC) 404, an online store 406, and a core (or datastore) 408. As indicated by interaction (1), a user (or customer), using a phone (e.g., mobile communication device 402 or personal computer 404), browses an online store website (online store application 410) and finds an item that the customer wishes to purchase. This could also be a purchase made through a midlet application (POS midlet 412) residing on the mobile communication device 402. The user then goes to, e.g., a checkout of the online store 406 make a purchase. If the user has coupons in their mobile wallet the user can either manually apply the coupon or have the coupon automatically applied during the transaction and the transaction amount is updated. When it comes time to authorize the purchase, (in one implementation) the user is given an option to purchase

with the mobile communication device 402. In one implementation, the mobile communication device 402 is an NFC-equipped phone (or NFC phone).

In interaction (2), when the user chooses to purchase with the mobile communication device 402, the online store application 410 sends the transaction information for authorization to the POS vendor plugin (e.g., MCD POS plugin 414). In one implementation, the POS vendor plugin is installed in the merchant's online store and enables the merchant to accepts MCD Blaze payments as an alternative form of payment, similar to accepting credit cards for payment. As shown by interaction (3), the POS vendor plugin formats, encrypts, and cryptographically signs the purchase authorization request which is sent via a secure SSL link (e.g., HTTPS, Bluetooth, IR, USB, or other suitable protocol) established by the browser/web application 416 back to the mobile communication device 402. As with the first scenario, all communications is over secure channels. (It may be required that the mobile wallet application be opened prior to beginning a phone online purchase.) The POS midlet 412 is a component of the mobile wallet application that executes PayPass or other payment authorization protocol between itself and the SE payment applications on the mobile communication device 402 (interaction (4)). The results of the request are sent back to the POS vendor plugin.

As shown by interaction (5), the POS midlet 412 then forwards the properly formatted authorization request to a payment entity (e.g., issuer authorization 418) for authorization. The results of the request are then sent back to the POS component of the mobile wallet. Through interaction (6), the POS midlet 412 then forwards the results back to the MCD POS plugin 414 to complete the purchase. The MCD POS plugin 414 then forwards the purchase transaction information to the management server 408 for later customer viewing (interaction (7)). As indicated by interaction (8), users (or customers) will then be able to query the management server 408 and immediately obtain purchase information, either by phone or PC.

One or more of method steps described above can be performed by one or more programmable processors executing a computer program to perform functions by operating on input data and generating output. Generally, the invention can take the form of an entirely hardware embodiment, an entirely software embodiment or an embodiment containing both hardware and software elements. In one implementation, the invention is implemented in software, which includes but is not limited to firmware, resident software, microcode, etc. Furthermore, the invention can take the form of a computer program product accessible from a computer-usable or computer-readable medium providing program code for use by or in connection with a computer or any instruction execution system. For the purposes of this description, a computer-usable or computer readable medium can be any apparatus that can contain, store, communicate, propagate, or transport the program for use by or in connection with the instruction execution system, apparatus, or device. The medium can be an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system (or apparatus or device) or a propagation medium. Examples of a computer-readable medium include a semiconductor or solid state memory, magnetic tape, a removable computer diskette, a random access memory (RAM), a read-only memory (ROM), a rigid magnetic disk and an optical disk. Current examples of optical disks include compact disk—read only memory (CD-ROM), compact disk—read/write (CD-R/W) and DVD.

FIG. 5 illustrates a data processing system 500 suitable for storing and/or executing program code. Data processing sys-

tem **500** includes a processor **502** coupled to memory elements **504A-B** through a system bus **506**. In other implementations, data processing system **500** may include more than one processor and each processor may be coupled directly or indirectly to one or more memory elements through a system bus. Memory elements **504A-B** can include local memory employed during actual execution of the program code, bulk storage, and cache memories that provide temporary storage of at least some program code in order to reduce the number of times the code must be retrieved from bulk storage during execution. As shown, input/output or I/O devices **508A-B** (including, but not limited to, keyboards, displays, pointing devices, etc.) are coupled to data processing system **500**. I/O devices **508A-B** may be coupled to data processing system **500** directly or indirectly through intervening I/O controllers (not shown).

In one implementation, a network adapter **510** is coupled to data processing system **500** to enable data processing system **500** to become coupled to other data processing systems or remote printers or storage devices through communication link **512**. Communication link **512** can be a private or public network. Modems, cable modems, and Ethernet cards are just a few of the currently available types of network adapters.

Although the present invention has been particularly described with reference to implementations discussed above, various changes, modifications and substitutes are can be made. Accordingly, it will be appreciated that in numerous instances some features of the invention can be employed without a corresponding use of other features. Further, variations can be made in the number and arrangement of components illustrated in the figures discussed above.

What is claimed is:

1. A method, comprising:

maintaining payment account information by using a payment application in a mobile device memory included in a mobile device, wherein the payment application is not browser based and is a mobile operating system platform based mobile application preinstalled or downloaded and installed on the mobile device, the mobile device comprising a mobile device display, a mobile device processor, a mobile device radio interface, and a mobile device wireless fidelity (Wi-Fi) interface;

receiving input at the payment application running on the mobile device from a user to initiate a transaction to purchase an item selected at the mobile device,

sending a request to a management server for a digital artifact for display within a specific payment application generated screen the payment application screen corresponding to a specific screen, scene, or real estate property, wherein the management server maintains plurality of user profiles and digital artifacts and selects the digital artifact based on correlating two or more targeting parameters from personal information and transaction history for the user;

receiving the digital artifact from the management server which processes the transaction for the selected item using a default payment method,

displaying the digital artifact within the specific payment application generated screen, wherein the payment application screen corresponds to a specific screen, scene, or real estate property.

2. The method of claim **1**, wherein a data exchange between the payment application and the management server has already occurred, wherein the management server permits a user associated with the payment application running on the mobile device to conduct a purchase as a result of the data exchange.

3. The method of claim **2**, wherein the data exchange includes exchanging an identification code.

4. The method of claim **3**, wherein the identification code is a personal identification number (PIN).

5. The method of claim **1**, wherein coupons are redeemed during the transaction.

6. The method of claim **1**, wherein a shopping list maintained by the payment application is applied during the transaction.

7. The method of claim **1**, wherein the digital artifact is an advertisement, receipt, ticket, coupon, media, or content received at the payment application.

8. The method of claim **1**, wherein the personal information comprises location, gender, age, interest, affiliation userid, pageid, zip code, area code, and occupation.

9. The method of claim **1**, wherein the transaction history comprises contactless transactions made using a secure element coupled to the mobile communication device, internet commerce, bill pay, top spend categories, merchants, storage of banking information, accessing banking services, tickets, transactions made by the user but not through the mobile communication device, and raw data downloaded from banks.

10. The method of claim **1**, wherein the mobile device is coupled to a secure element, the secure element including a secure element processor configured for near field communication transaction processing, a secure element memory configured to maintain a secure element application, and a secure element near field communication transceiver.

11. A mobile device, comprising:

a mobile device memory configured to maintain payment account information associated with a mobile payment application, wherein the mobile payment application is not browser based and is a mobile operating system platform based mobile application preinstalled or downloaded and installed on the mobile device;

a mobile device wireless fidelity (Wi-Fi) interface;

a mobile device input interface configured to receive input from a user to initiate a transaction to purchase an item selected at the mobile device;

a mobile device processor configured to send a request for a digital artifact for display within a specific payment application generated screen to a management server and receive the digital artifact from the management server which processes the transaction for the selected item using a default payment method; the payment application screen corresponding to a specific screen, scene, or real estate property, wherein the management server maintains plurality of user profiles and digital artifacts and selects the digital artifact based on correlating two or more targeting parameters from personal information and transaction history for the user;

a mobile device display configured to display the digital artifact within the specific payment application generated screen, wherein the payment application screen corresponds to is a specific screen, scene, or real estate property.

12. The mobile device of claim **11**, wherein a data exchange between the payment application and the management server has already occurred, wherein the management server permits a user associated with the payment application running on the mobile device to conduct the transaction as a result of the data exchange.

13. The mobile device of claim **11**, wherein the data exchange includes exchanging an identification code.

14. The mobile device of claim **13**, wherein the identification code is a personal identification number (PIN).

15. The mobile device of claim **11**, wherein coupons are redeemed during the transaction.

16. The mobile device of claim **11**, wherein a shopping list maintained by the payment application is applied during the transaction.

17. The mobile device of claim **11**, wherein the digital artifact is an advertisement, receipt, ticket, coupon, media, or content received at the payment application.

18. The mobile device of claim **11**, wherein personal information includes location, gender, age, interest, affiliation, userid, pageid, zip code, area code, and occupation.

19. The mobile device of claim **11**, wherein transaction history includes contactless transactions made using a secure element coupled to the mobile communication device, internet commerce, bill pay, top spend categories, merchants, storage of digital artifacts, storage of banking information, accessing banking services, tickets, transactions made by the user but not through the mobile communication device, and raw data downloaded from banks.

20. A non-transitory computer readable medium, comprising:

computer code for maintaining payment account information by using a payment application in a mobile device memory included in a mobile device, wherein the payment application is not browser based and is a mobile operating system platform based mobile application

preinstalled or downloaded and installed on the mobile device, the mobile device comprising a mobile device display, a mobile device processor, a mobile device radio interface, and a mobile device wireless fidelity (Wi-Fi) interface;

computer code for receiving input at the payment application running on the mobile device from a user to initiate a transaction to purchase an item selected at the mobile device

computer code for sending a request to a management server for a digital artifact for display within a specific payment application generated screen, the payment application screen corresponding to a specific screen, scene, or real estate property, wherein the management server maintains plurality of user profiles and digital artifacts and selects the digital artifact based on correlating two or more targeting parameters from personal information and transaction history for the user;

computer code for receiving the digital artifact from the management server which processes the transaction for the selected item using a default payment method;

computer code for displaying the digital artifact within the specific payment application generated screen, wherein the payment application screen corresponds to is a specific screen, scene, or real estate property.

* * * * *