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(12) **United States Patent**
Killoran, Jr. et al.

(10) **Patent No.: US 11,416,829 B2**
(45) **Date of Patent: Aug. 16, 2022**

(54) **MYRIAD OF PAYMENT METHODS WITH ALTERNATE PAYMENT CONTROLS**

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(73) Assignee: **SWOOP IP HOLDINGS LLC**, Wilmington, DE (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 803 days.

(21) Appl. No.: **15/209,338**

(22) Filed: **Jul. 13, 2016**

(65) **Prior Publication Data**

US 2017/0017939 A1 Jan. 19, 2017

Related U.S. Application Data

(60) Provisional application No. 62/205,511, filed on Aug. 14, 2015, provisional application No. 62/191,841, filed on Jul. 13, 2015.

(51) **Int. Cl.**
G06Q 10/10 (2012.01)
H04W 4/14 (2009.01)
(Continued)

(52) **U.S. Cl.**
CPC ***G06Q 10/1097*** (2013.01); ***G06Q 20/12*** (2013.01); ***G06Q 20/227*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC .. G06Q 10/1097; G06Q 20/12; G06Q 20/227; G06Q 20/384; G06Q 20/386;
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,101,485 A 8/2000 Fortenberry et al.
6,167,435 A 12/2000 Druckenmiller et al.
(Continued)

OTHER PUBLICATIONS

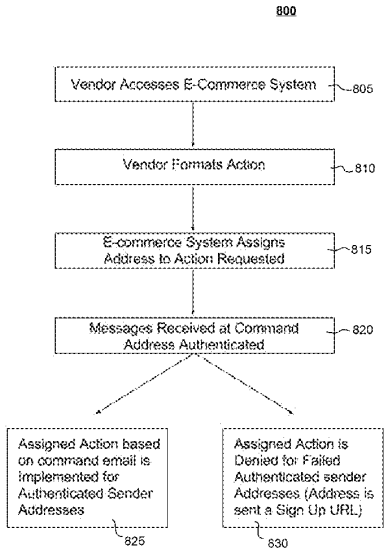
Ron White, How Computers Work, 2003, Que, 7th (Year: 2003).*

Primary Examiner — Zeshan Qayyum
Assistant Examiner — Yingying Zhou
(74) *Attorney, Agent, or Firm* — Volpe Koenig

(57) **ABSTRACT**

A system and method for providing an email as a command is disclosed. The system and method include formatting an action in an e-commerce system based on an assigned address, wherein communication with the assigned address initiates the action, and authenticating a message addressed to the assigned address, wherein for a positively authenticated message the action is performed. The system and method may also include receiving the message sent to the assigned address. For negatively authenticated messages, the system and method include providing a sender of the message a sign-up to enable positive authentication. The system and method may include requesting details of the action based on the message. The system and method may include sending an invoice for the action to the address that sent the authenticated message and processing a payment based on a response to the sent invoice.

20 Claims, 34 Drawing Sheets



(51) **Int. Cl.**

H04L 51/046	(2022.01)
G06Q 20/12	(2012.01)
G06Q 20/22	(2012.01)
H04L 67/02	(2022.01)
H04L 51/52	(2022.01)

(52) **U.S. Cl.**
CPC ***H04L 51/046*** (2013.01); ***H04W 4/14*** (2013.01); *H04L 51/52* (2022.05); *H04L 67/02* (2013.01)

(58) **Field of Classification Search**
CPC H04L 51/046; H04L 51/32; H04L 67/02; H04W 4/14
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,996,328	B1 *	8/2011	Lundberg	G06Q 10/08 705/333
8,392,357	B1 *	3/2013	Zou	H04L 51/12 707/602
8,606,703	B1 *	12/2013	Dorsey	G06Q 10/107 705/39
8,725,635	B2	5/2014	Klein et al.	
8,762,272	B1	6/2014	Cozens et al.	
10,395,223	B2	8/2019	Muthu et al.	
10,515,345	B2	12/2019	Koh et al.	
2009/0006233	A1	1/2009	Chemtob	
2009/0282108	A1 *	11/2009	Sachtjen	H04L 9/3271 709/206
2010/0070419	A1 *	3/2010	Vadhri	G06Q 10/107 705/71
2012/0130898	A1	5/2012	Snyder et al.	
2012/0253896	A1 *	10/2012	Killoran, Jr.	H04L 51/02 705/14.4
2014/0025487	A1 *	1/2014	Killoran	G06Q 30/0241 705/14.49
2015/0134508	A1 *	5/2015	Lucas	G06Q 20/24 705/39
2016/0125371	A1 *	5/2016	Grassadonia	G06Q 20/34 705/44
2017/0255911	A1 *	9/2017	Kassemi	G06Q 20/102

* cited by examiner

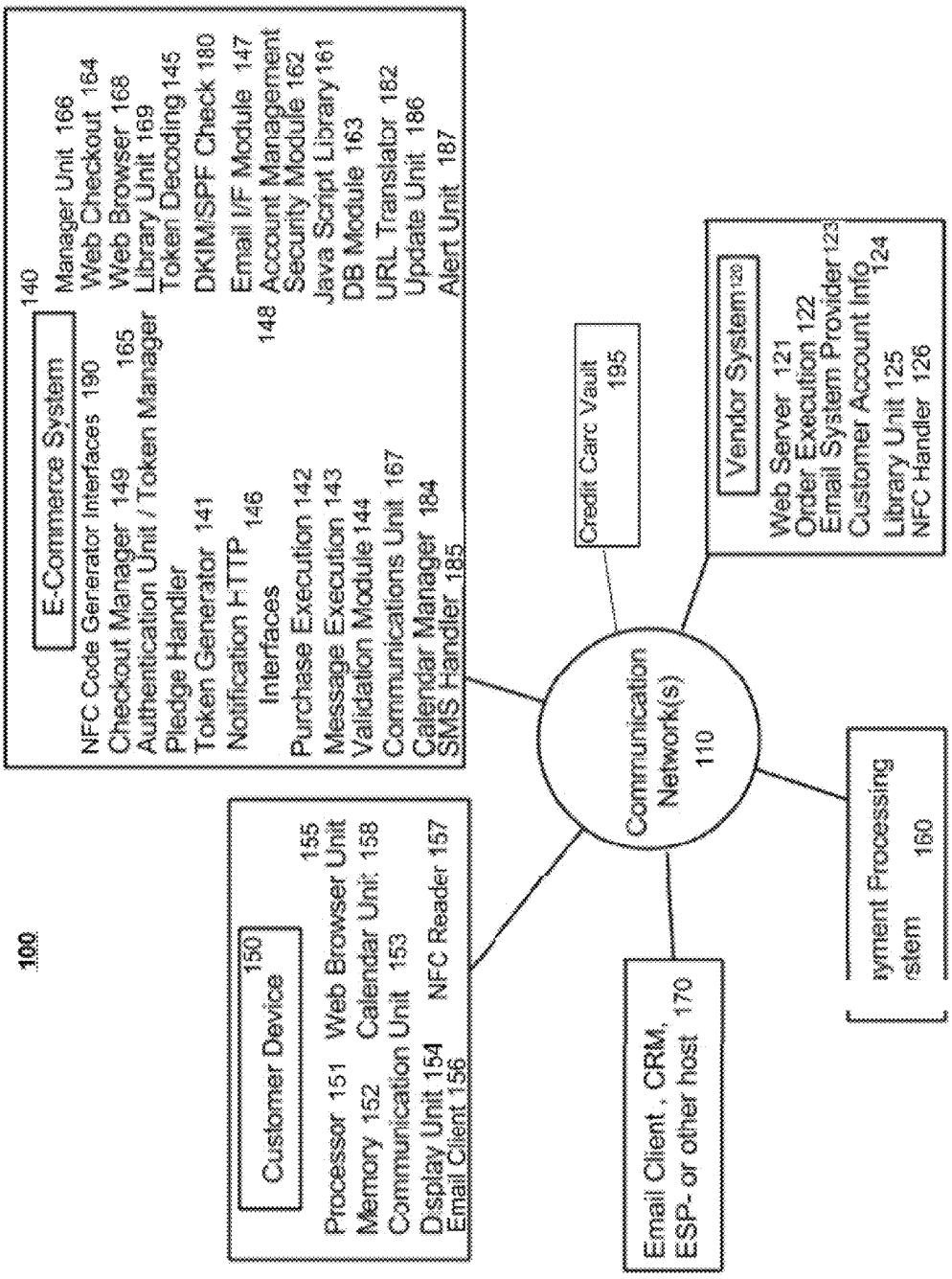

100
E-Commerce System
140
NFC Code Gererator Interfaces 190
Checkout Manager 149
165
Authentication Unit / Token Manager
Pledge Handler
Token Generator 141
Notification HTTP Interfaces 146
148
Purchase Execution 142
Message Execution 143
Validation Module 144
Communications Unit 167
Calendar Manager 184
SMS Handler 185
Manager Unit 166
Web Checkout 184
Web Browser 168
Library Unit 169
Token Decoding 145
DKIM/SPF Check 180
Email I/F Module 147
Account Management Security Module 162
Java Script Library 161
DB Module 163
URL Translator 182
Update Unit 186
Alert Unit 187
Customer Device
150
155
Processor 151
Web Browser Unit
Memory 152
Calendar Unit 158
Communication Unit 153
Display Unit 154
NFC Reader 157
Email Client 156
Communication Network(s)
110
Credit Carc Vault
195
Vendor System 120
Web Server 121
Order Execution 122
Email System Provider 123
Customer Account Info 124
Library Unit 125
NFC Handler 126
Email Client , CRM, ESP- or other host 170
yment Processing stem 160

FIG. 1

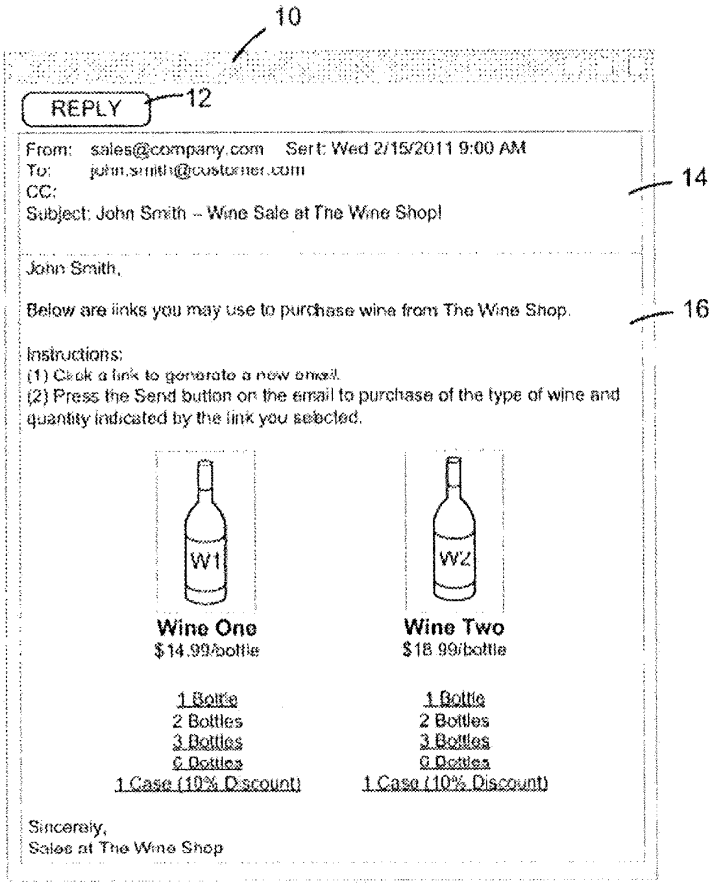

10
REPLY
12
From: sales@company.com Sent: Wed 2/15/2011 9:00 AM
To: john.smith@customer.com
CC:
Subject: John Smith – Wine Sale at The Wine Shop!
14
John Smith,
Below are links you may use to purchase wine from The Wine Shop.
16
Instructions:
(1) Click a link to generate a new email.
(2) Press the Send button on the email to purchase of the type of wine and quantity indicated by the link you selected.
W1
Wine One
$14.99/bottle
1 Bottle
2 Bottles
3 Bottles
6 Bottles
1 Case (10% Discount)
W2
Wine Two
$18.99/bottle
1 Bottle
2 Bottles
3 Bottles
6 Bottles
1 Case (10% Discount)
Sincerely,
Sales at The Wine Shop

FIG. 2

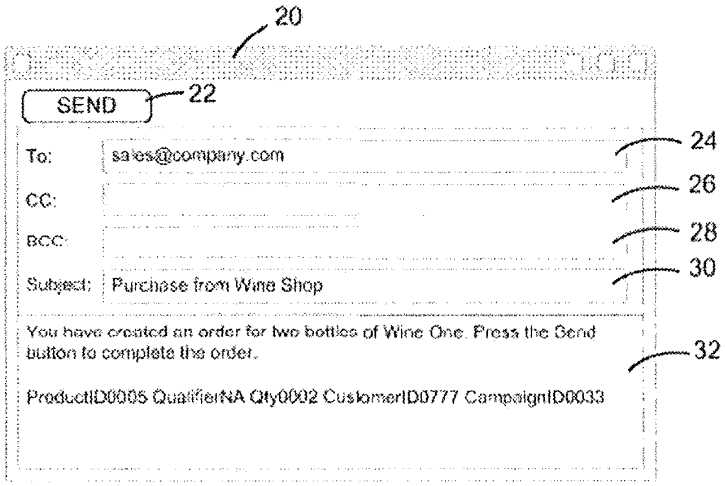

20
SEND
22
To:
sales@company.com
24
CC:
26
BCC:
28
Subject:
Purchase from Wine Shop
30
You have created an order for two bottles of Wine One. Press the Send button to complete the order.
32
ProductID0005 QualifierNA Qty0002 CustomerID0777 CampaignID0033

FIG. 3

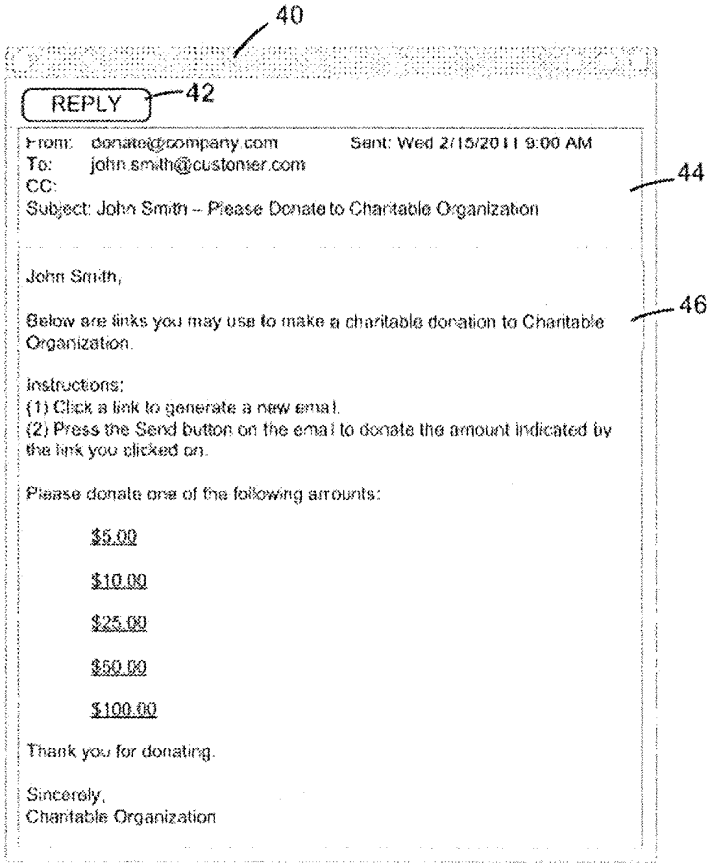

40
REPLY
42
From: donate@company.com Sent: Wed 2/15/2011 9:00 AM
To: john.smith@customer.com
CC:
Subject: John Smith – Please Donate to Charitable Organization
44
John Smith,
Below are links you may use to make a charitable donation to Charitable Organization.
46
Instructions:
(1) Click a link to generate a new email.
(2) Press the Send button on the email to donate the amount indicated by the link you clicked on.
Please donate one of the following amounts:
$5.00
$10.00
$25.00
$50.00
$100.00
Thank you for donating.
Sincerely,
Charitable Organization

FIG. 4

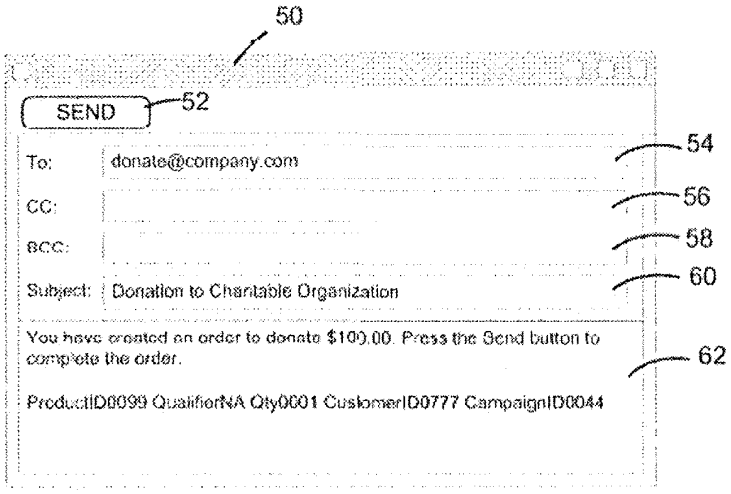

50
SEND
52
To:
donate@company.com
54
CC:
56
BCC:
58
Subject:
Donation to Charitable Organization
60
You have created an order to donate $100.00. Press the Send button to complete the order.
62
ProductID0099 QualifierNA Qty0001 CustomerID0777 CampaignID0044

FIG. 5

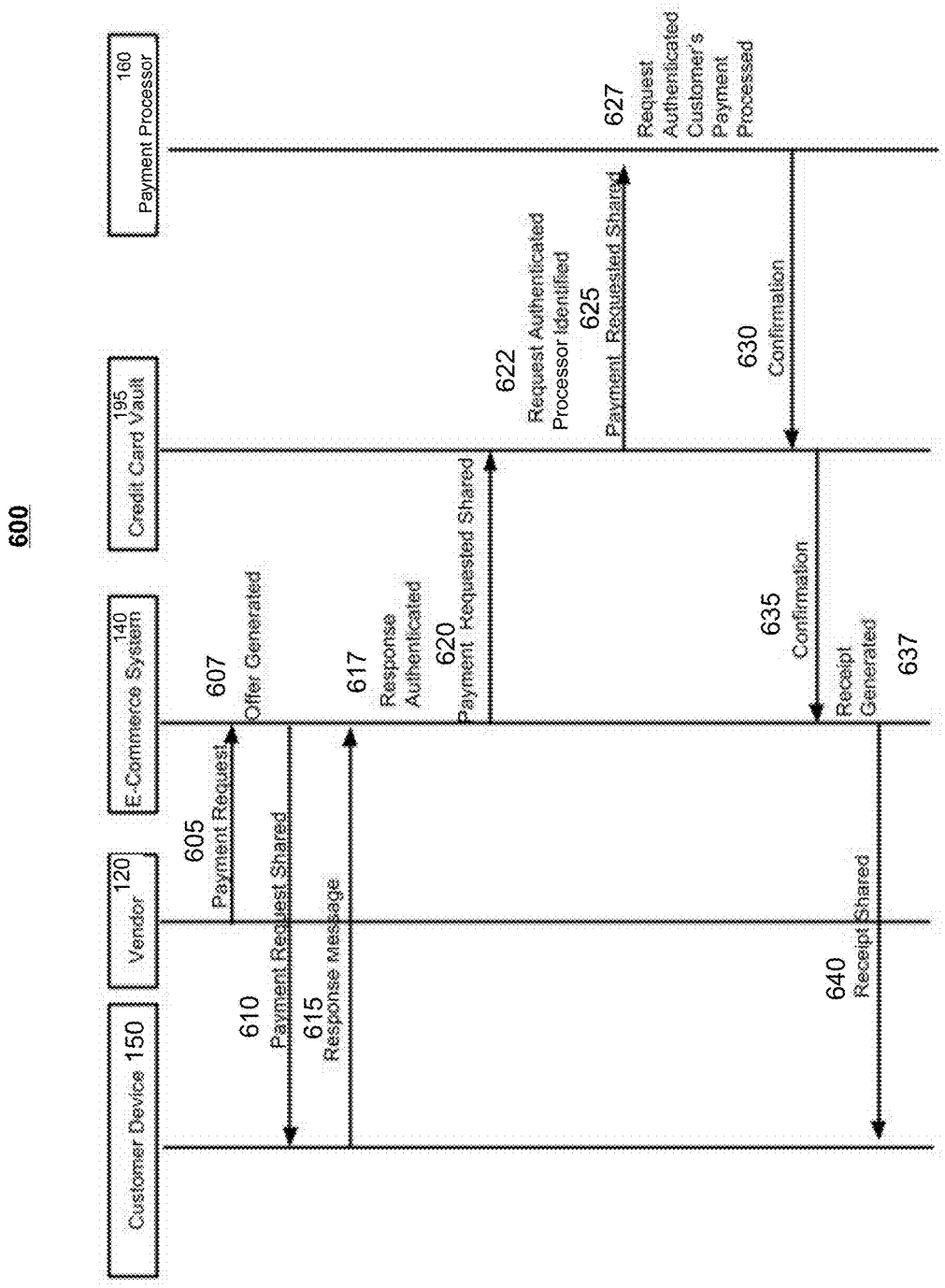

600
Customer Device 150
Vendor 120
E-Commerce System 140
Credit Card Vault 195
Payment Processor 160
605 Payment Request
607 Offer Generated
610 Payment Request Shared
615 Response Message
617 Response Authenticated
620 Payment Requested Shared
622 Request Authenticated Processor Identified
625 Payment Requested Shared
627 Request Authenticated Customer's Payment Processed
630 Confirmation
635 Confirmation
637 Receipt Generated
640 Receipt Shared

FIG. 6A

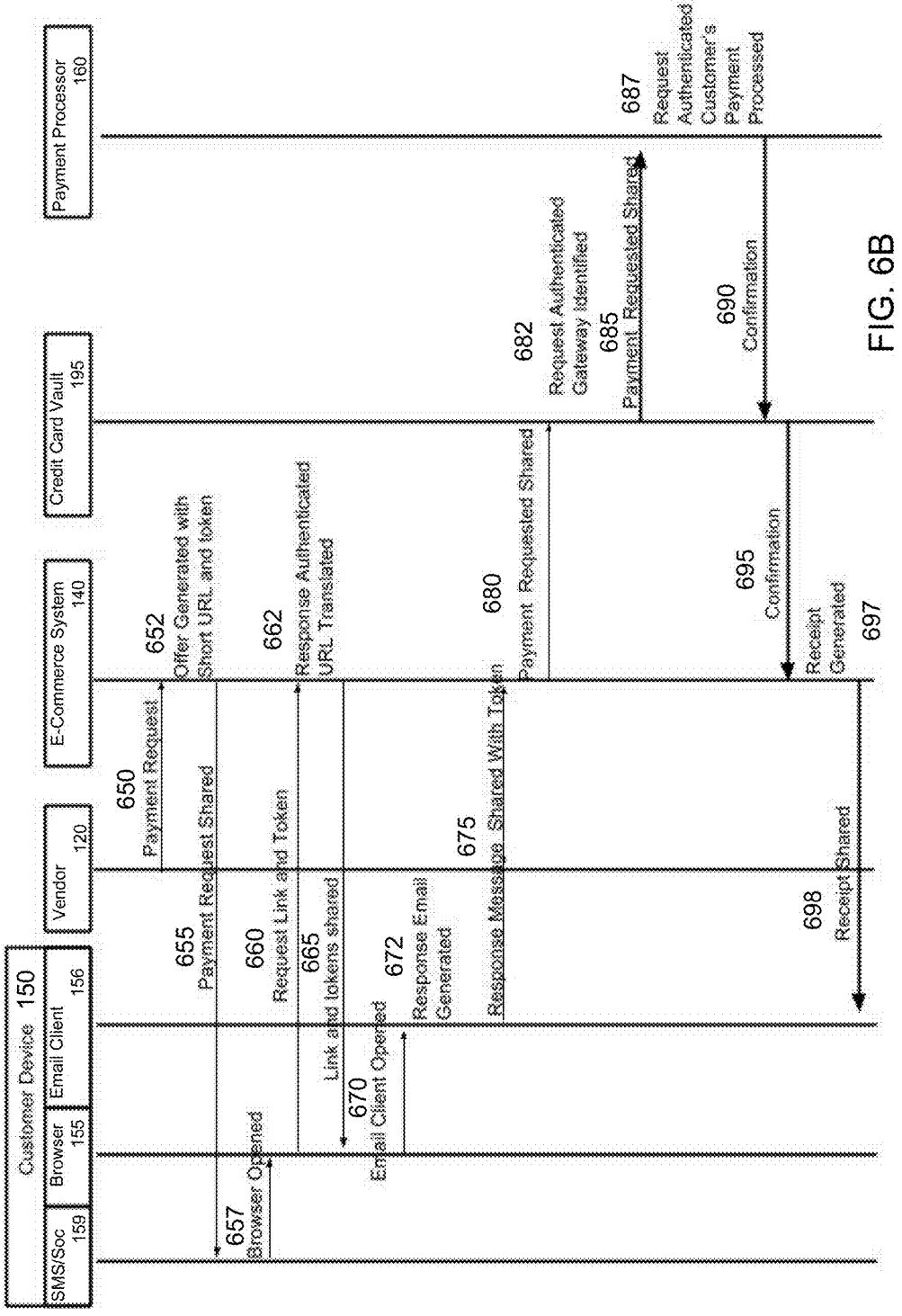

645
Customer Device 150
SMS/Soc 159
Browser 155
Email Client 156
Vendor 120
E-Commerce System 140
Credit Card Vault 195
Payment Processor 160
650 Payment Request
652 Offer Generated with Short URL and token
655 Payment Request Shared
657 Browser Opened
660 Request Link and Token
662 Response Authenticated URL Translated
665 Link and tokens shared
670 Email Client Opened
672 Response Email Generated
675 Response Message Shared With Token
680 Payment Requested Shared
682 Request Authenticated Gateway identified
685 Payment Requested Shared
687 Request Authenticated Customer's Payment Processed
690 Confirmation
695 Confirmation
697 Receipt Generated
698 Receipt Shared

FIG. 6B

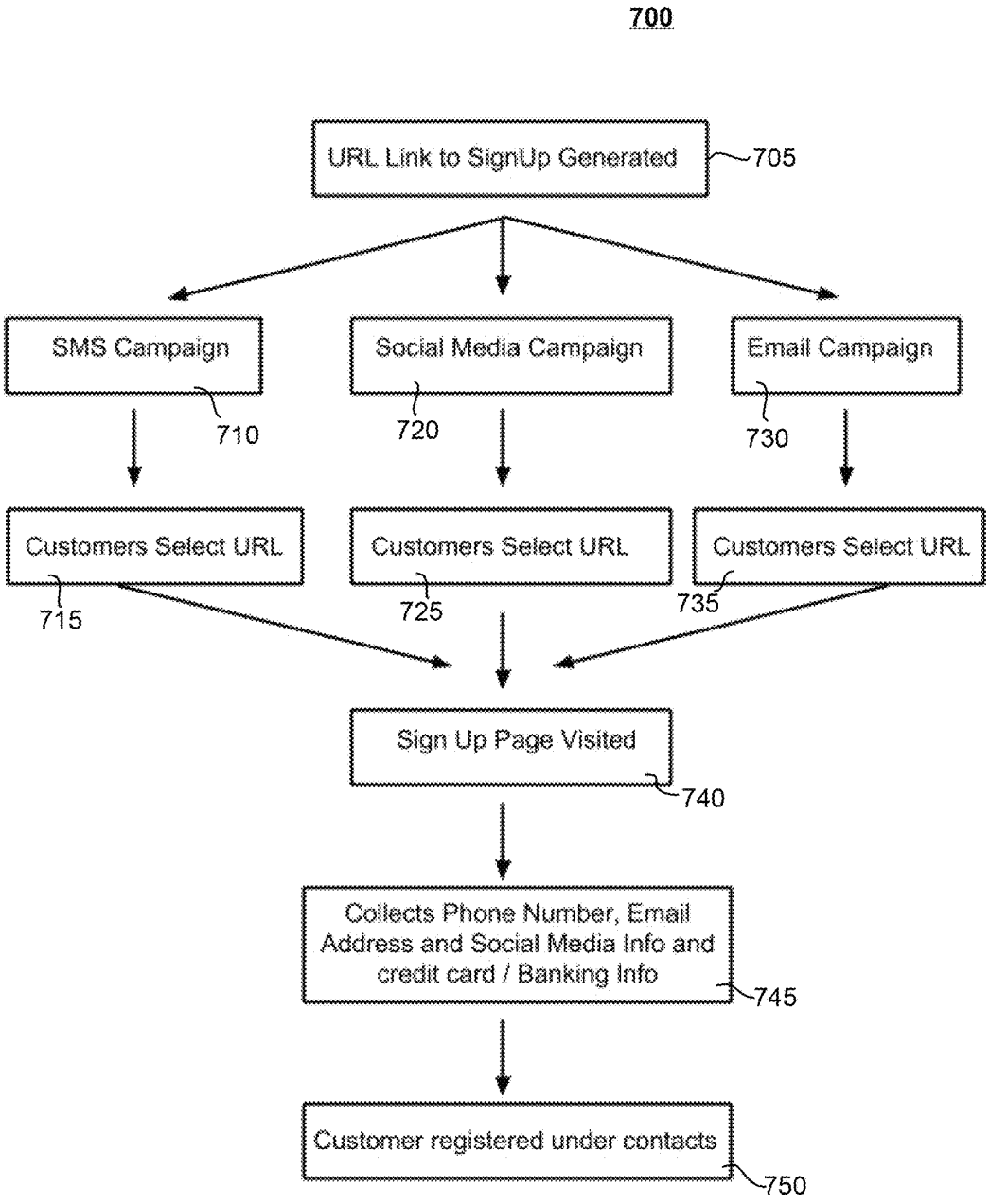

700
URL Link to SignUp Generated
705
SMS Campaign
710
Social Media Campaign
720
Email Campaign
730
Customers Select URL
715
Customers Select URL
725
Customers Select URL
735
Sign Up Page Visited
740
Collects Phone Number, Email Address and Social Media Info and credit card / Banking Info
745
Customer registered under contacts
750

FIG. 7

800

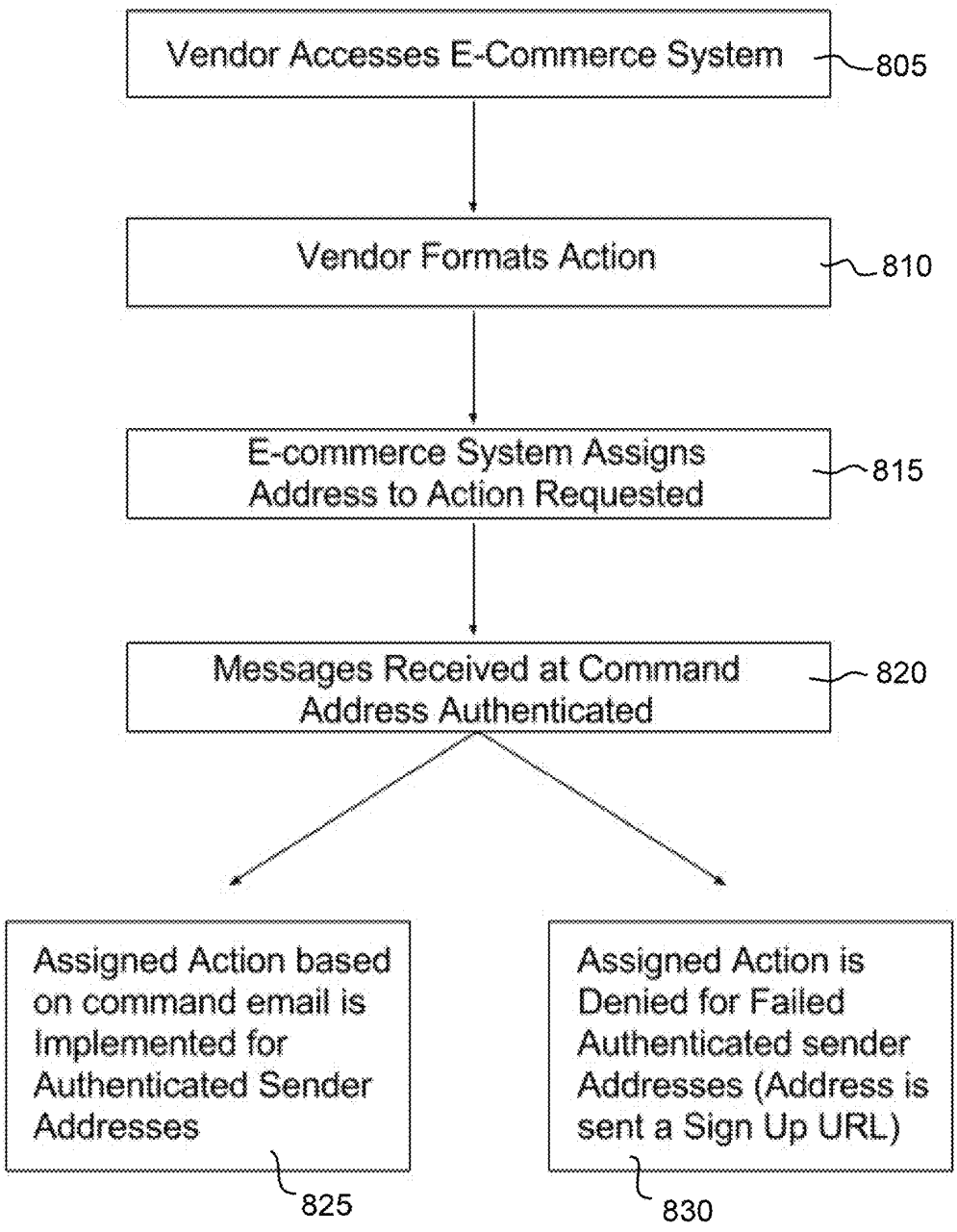

Vendor Accesses E-Commerce System
805
Vendor Formats Action
810
E-commerce System Assigns Address to Action Requested
815
Messages Received at Command Address Authenticated
820
Assigned Action based on command email is Implemented for Authenticated Sender Addresses
825
Assigned Action is Denied for Failed Authenticated sender Addresses (Address is sent a Sign Up URL)
830

FIG. 8A

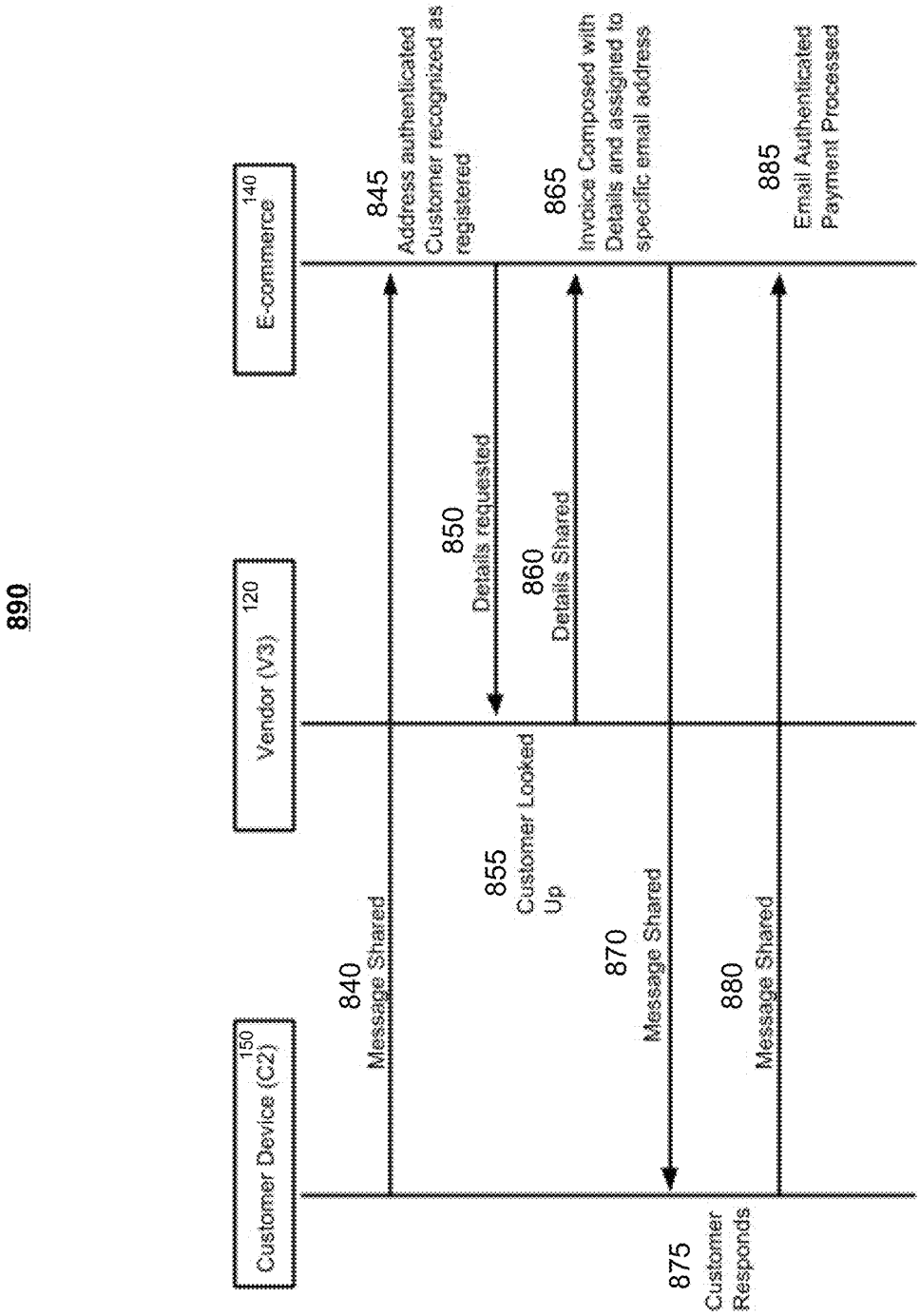

890
Customer Device (C2) 150
Vendor (V3) 120
E-commerce 140
840 Message Shared
845 Address authenticated Customer recognized as registered
850 Details requested
855 Customer Looked Up
860 Details Shared
865 Invoice Composed with Details and assigned to specific email address
870 Message Shared
875 Customer Responds
880 Message Shared
885 Email Authenticated Payment Processed

FIG. 8B

900

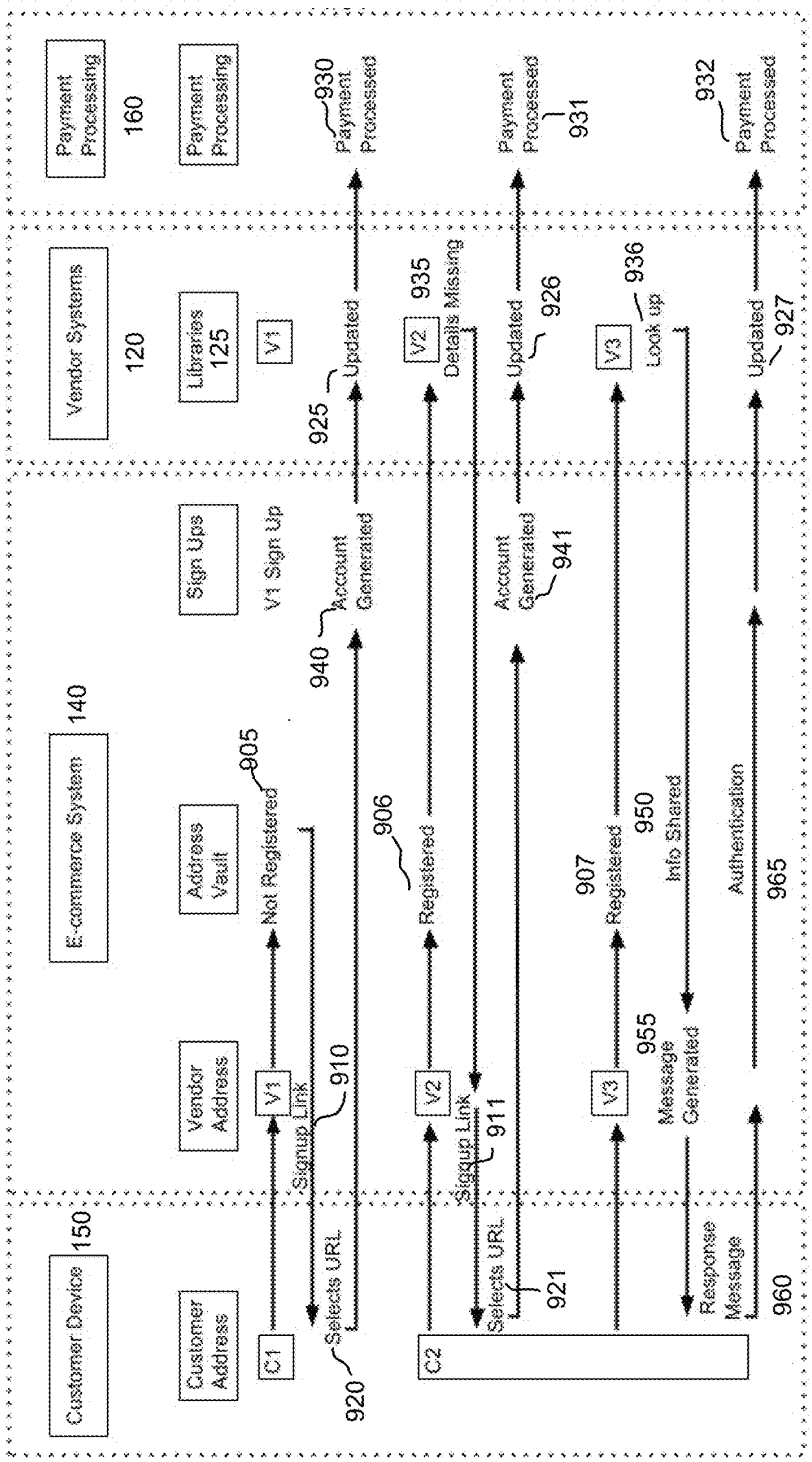

Customer Device
150
Customer Address
C1
C2
Selects URL
920
Signup Link
910
Selects URL
921
Signup Link
911
Response Message
960
Vendor Address
V1
V2
V3
Message Generated
955
Not Registered
905
Registered
906
Registered
907
Info Shared
950
Authentication
965
E-commerce System
140
Address Vault
Sign Ups
V1 Sign Up
Account Generated
940
Account Generated
941
Vendor Systems
120
Libraries
125
V1
V2
V3
Updated
925
Details Missing
935
Updated
926
Look up
936
Updated
927
Payment Processing
160
Payment Processing
930
Payment Processed
Payment Processed
931
Payment Processed
932

FIG. 9

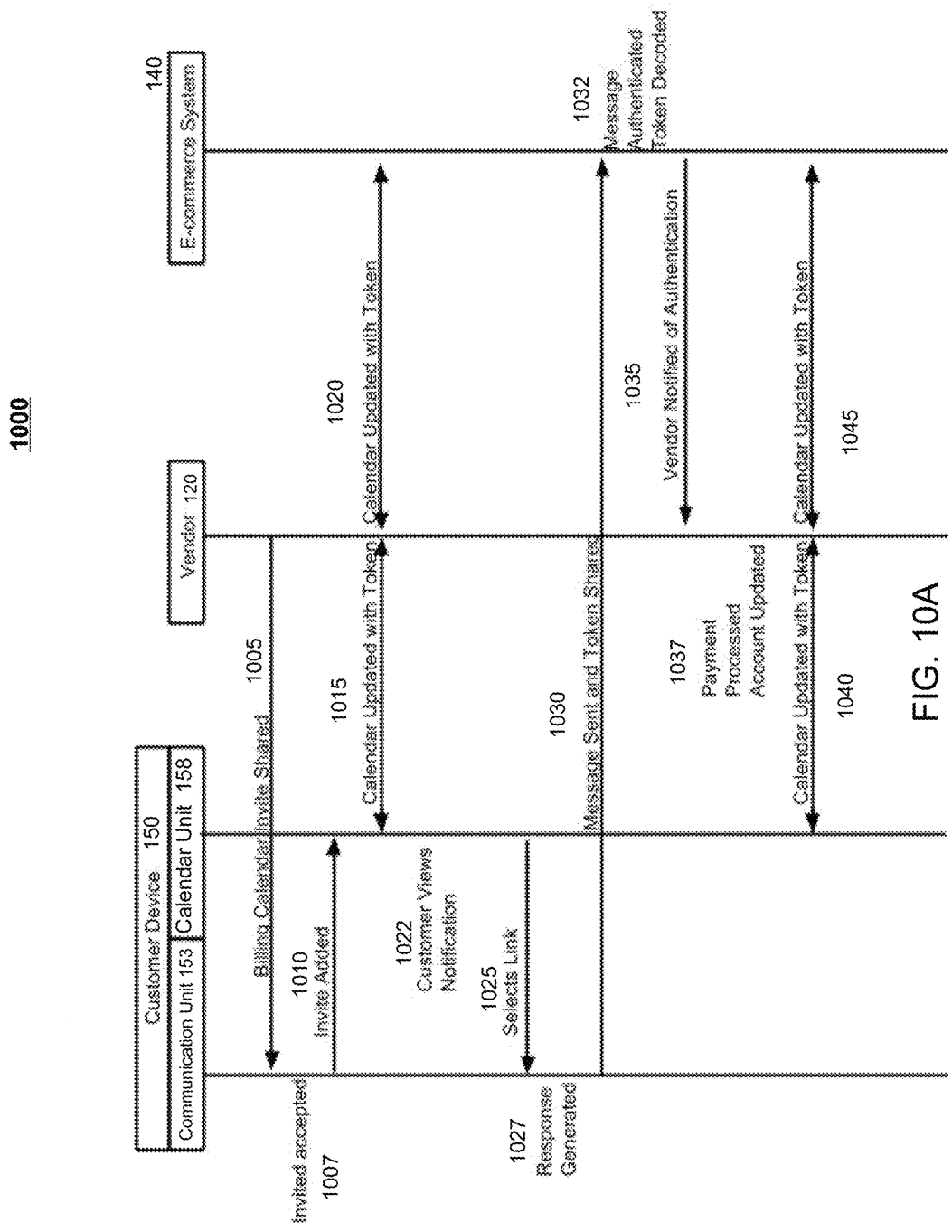

1000
Customer Device 150
Communication Unit 153
Calendar Unit 158
Vendor 120
E-commerce System 140
1005 Billing Calendar Invite Shared
1010 Invite Added
1015 Calendar Updated with Token
1020 Calendar Updated with Token
1022 Customer Views Notification
1025 Selects Link
1027 Response Generated
1030 Message Sent and Token Shared
1032 Message Authenticated Token Decoded
1035 Vendor Notified of Authentication
1037 Payment Processed Account Updated
1040 Calendar Updated with Token
1045 Calendar Updated with Token
Invited accepted 1007

FIG. 10A

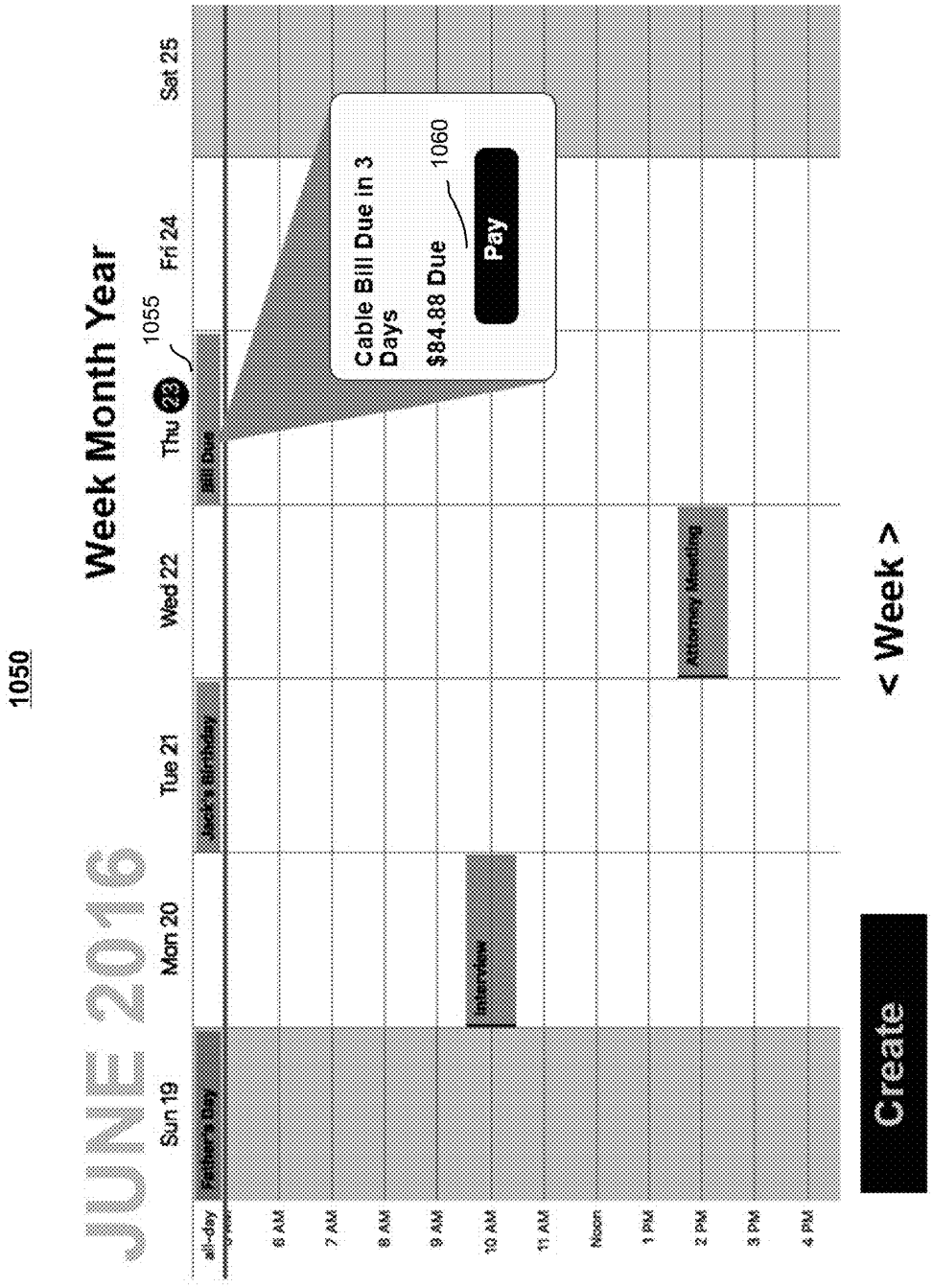

1050
JUNE 2016
Week Month Year
Sun 19
Mon 20
Tue 21
Wed 22
Thu 23
Fri 24
Sat 25
1055
Cable Bill Due in 3 Days
$84.88 Due
1060
Pay
Create
< Week >

FIG. 10B

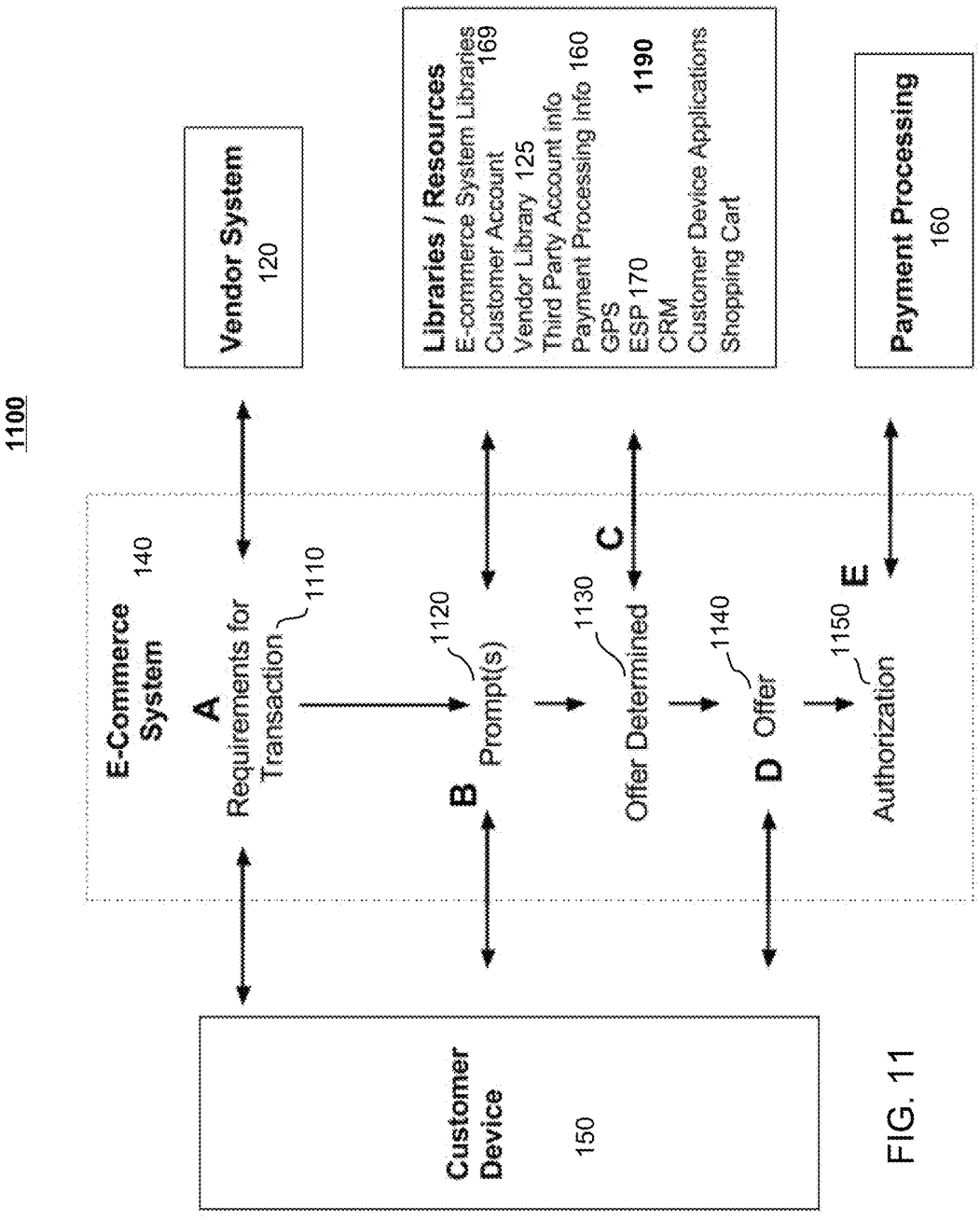

1100
Vendor System
120
Libraries / Resources
E-commerce System Libraries 169
Customer Account
Vendor Library 125
Third Party Account info
Payment Processing Info 160
GPS
ESP 170 1190
CRM
Customer Device Applications
Shopping Cart
Payment Processing
160
E-Commerce System 140
A Requirements for Transaction 1110
B Prompt(s) 1120
C Offer Determined 1130
D Offer 1140
E Authorization 1150
Customer Device 150

FIG. 11

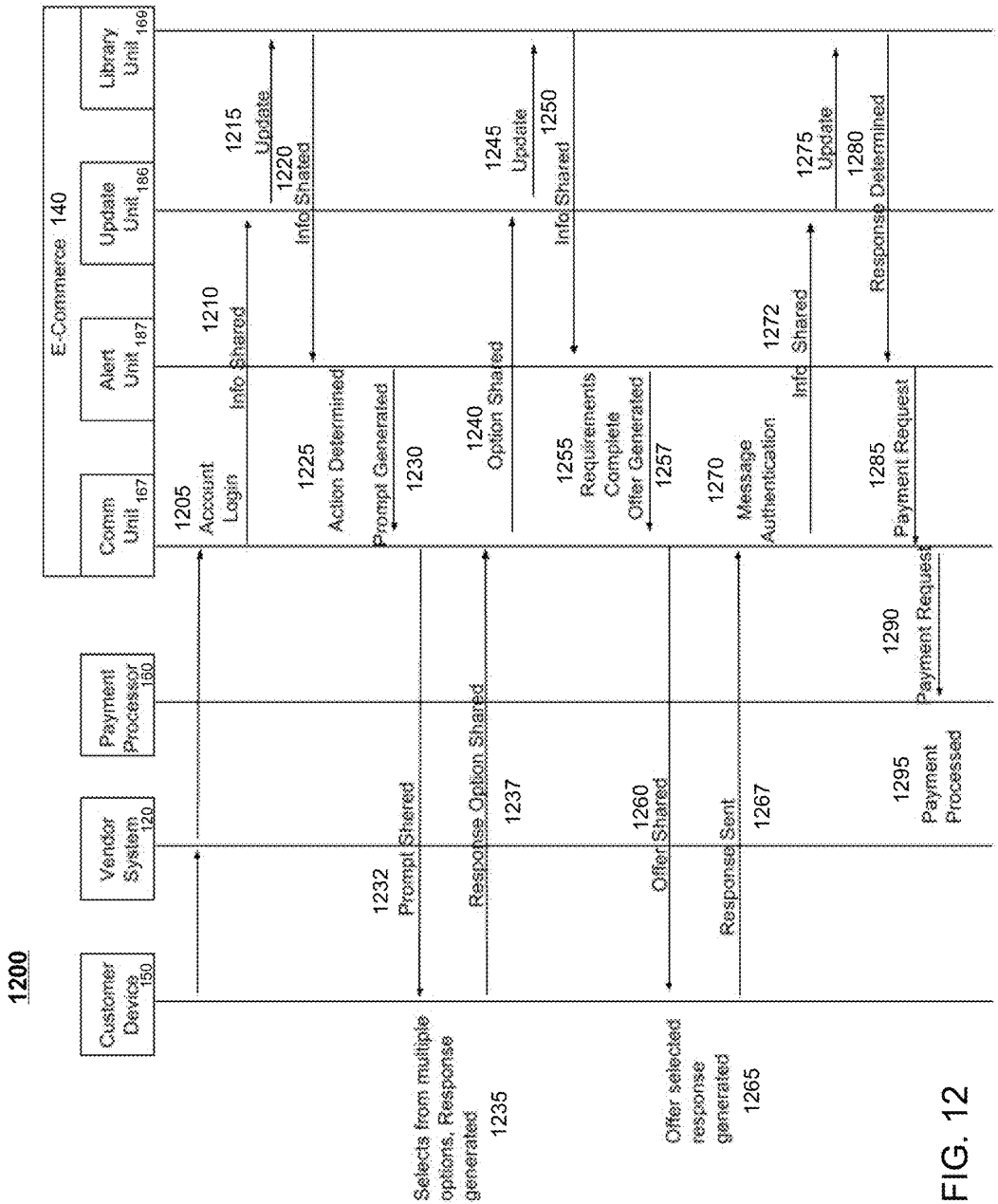

1200
Customer Device 150
Vendor System 120
Payment Processor 160
E-Commerce 140
Comm Unit 167
Alert Unit 187
Update Unit 186
Library Unit 169
1205 Account Login
1210 Info Shared
1215 Update
1220 Info Shared
1225 Action Determined
1230 Prompt Generated
1232 Prompt Shared
1235 Selects from multiple options, Response generated
1237 Response Option Shared
1240 Option Shared
1245 Update
1250 Info Shared
1255 Requirements Complete Offer Generated
1257
1260 Offer Shared
1265 Offer selected response generated
1267 Response Sent
1270 Message Authentication
1272 Info Shared
1275 Update
1280 Response Determined
1285 Payment Request
1290 Payment Request
1295 Payment Processed

FIG. 12

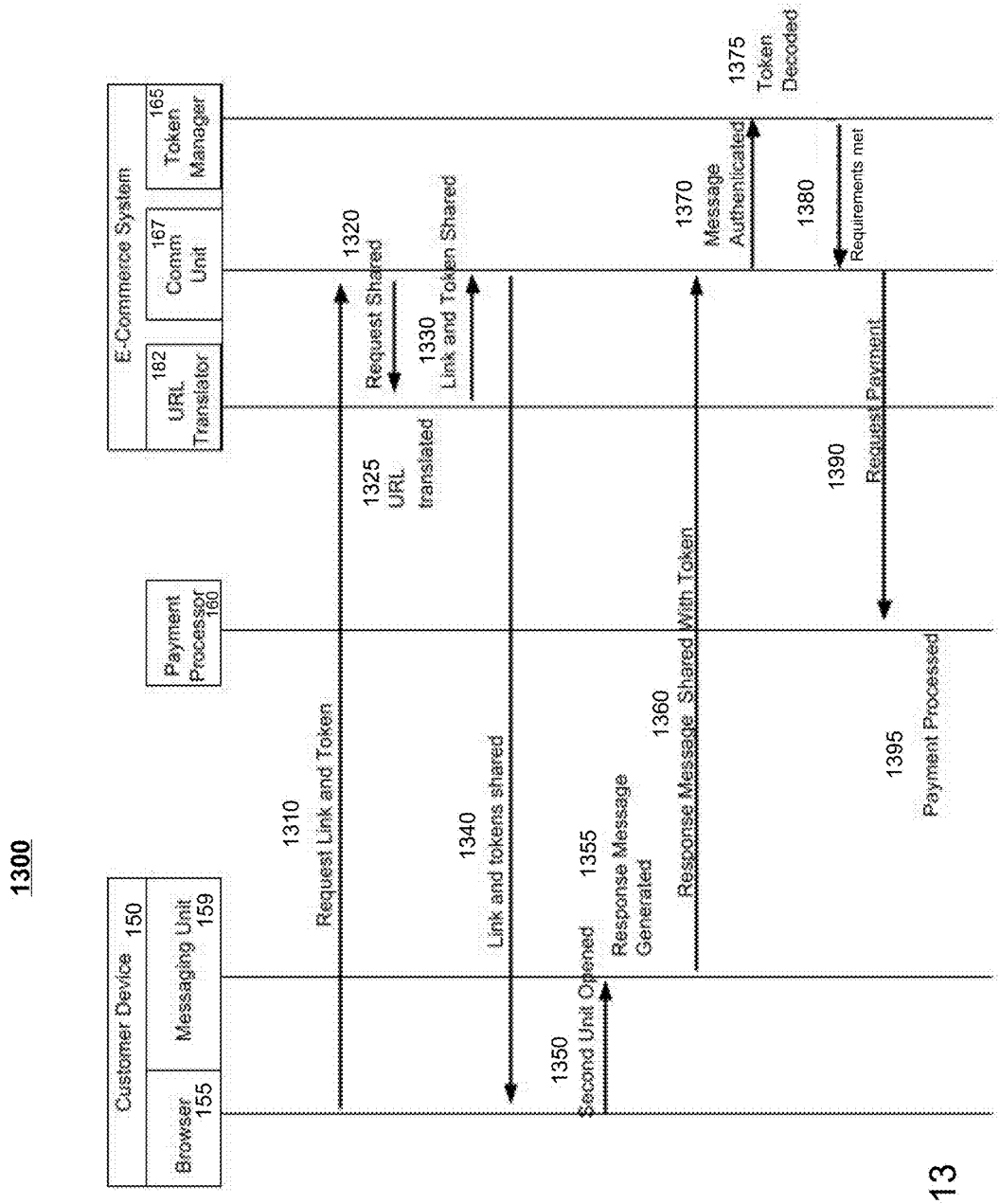

1300
Customer Device 150
Browser 155
Messaging Unit 159
Payment Processor 160
E-Commerce System
URL Translator 182
Comm Unit 167
Token Manager 165
1310 Request Link and Token
1320 Request Shared
1325 URL translated
1330 Link and Token Shared
1340 Link and tokens shared
1350 Second Unit Opened
1355 Response Message Generated
1360 Response Message Shared With Token
1370 Message Authenticated
1375 Token Decoded
1380 Requirements met
1390 Request Payment
1395 Payment Processed

FIG. 13

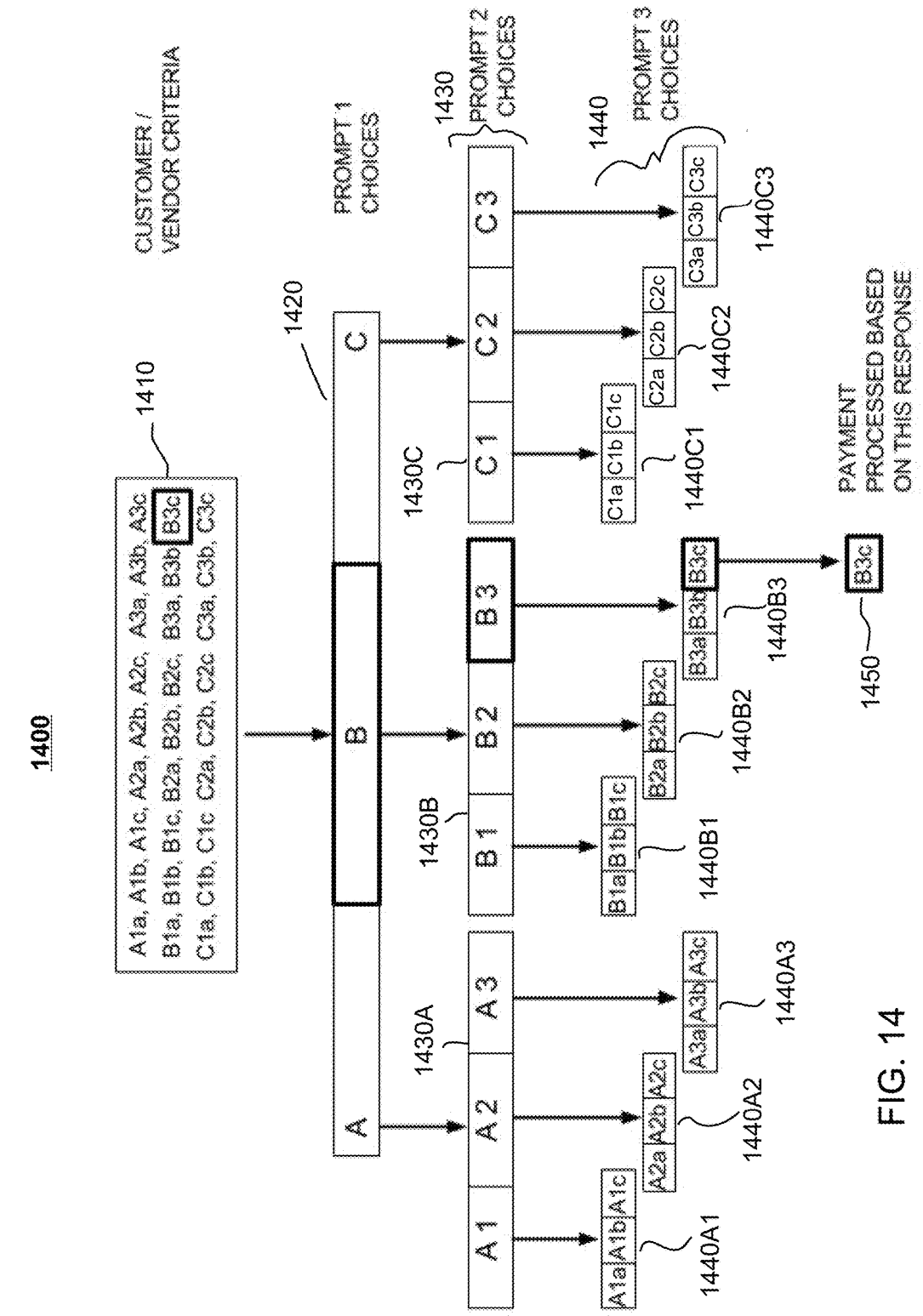

1400
CUSTOMER / VENDOR CRITERIA
1410
A1a, A1b, A1c, A2a, A2b, A2c, A3a, A3b, A3c
B1a, B1b, B1c, B2a, B2b, B2c, B3a, B3b, B3c
C1a, C1b, C1c C2a, C2b, C2c C3a, C3b, C3c
1420
PROMPT 1 CHOICES
A
B
C
1430A
1430B
1430C
1430 PROMPT 2 CHOICES
A1
A2
A3
B1
B2
B3
C1
C2
C3
1440 PROMPT 3 CHOICES
1440A1
1440A2
1440A3
1440B1
1440B2
1440B3
1440C1
1440C2
1440C3
A1a A1b A1c
A2a A2b A2c
A3a A3b A3c
B1a B1b B1c
B2a B2b B2c
B3a B3b B3c
C1a C1b C1c
C2a C2b C2c
C3a C3b C3c
1450
PAYMENT PROCESSED BASED ON THIS RESPONSE
B3c

FIG. 14

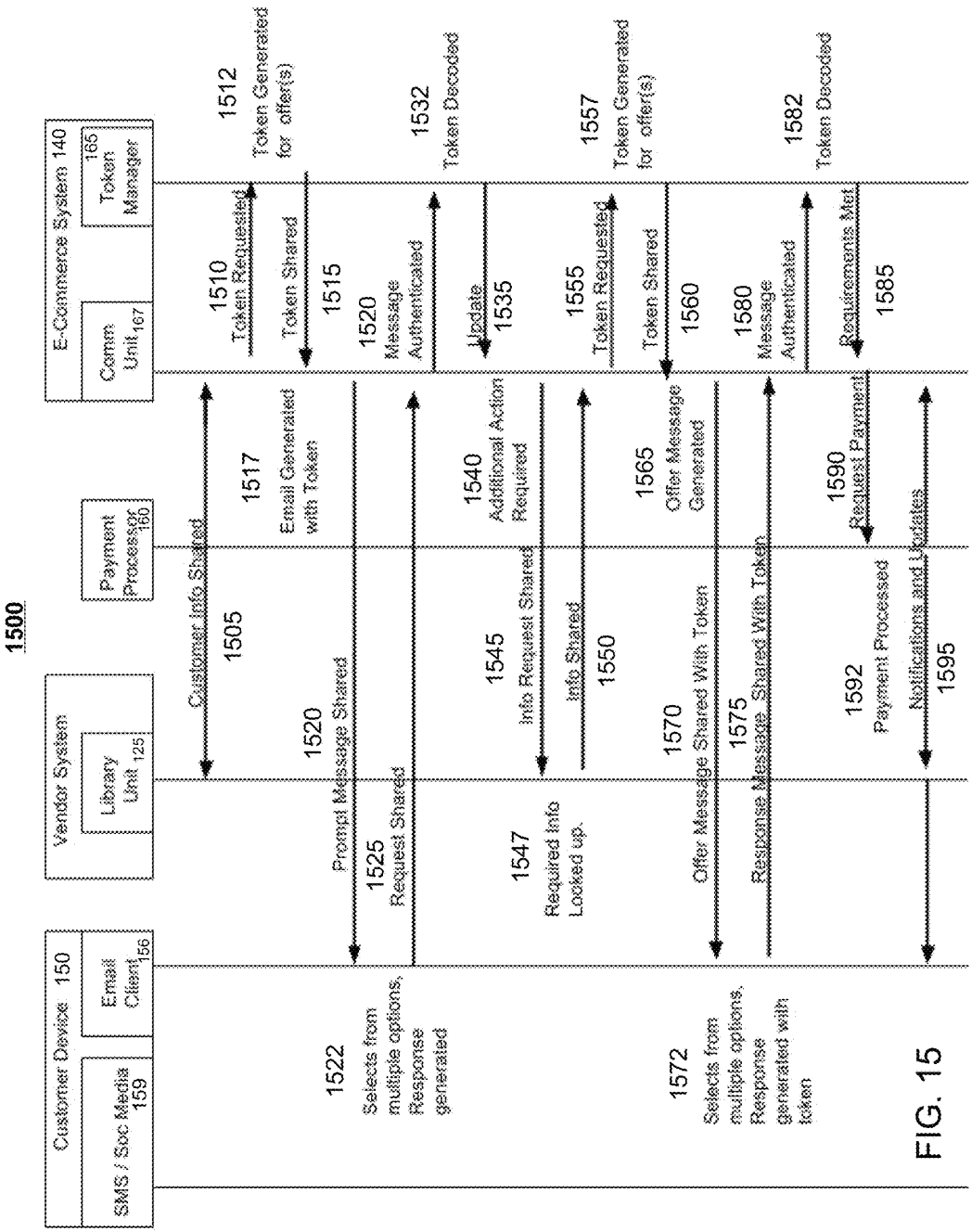

1500
Customer Device 150
SMS / Soc Media 159
Email Client 156
Vendor System
Library Unit 125
Payment Processor 160
E-Commerce System 140
Comm Unit 167
Token Manager 165
1505 Customer Info Shared
1510 Token Requested
1512 Token Generated for offer(s)
Token Shared
1515
1517 Email Generated with Token
1520 Prompt Message Shared
1520 Message Authenticated
1522 Selects from multiple options, Response generated
1525 Request Shared
1532 Token Decoded
Update 1535
1540 Additional Action Required
1545 Info Request Shared
1547 Required Info Locked up.
Info Shared 1550
1555 Token Requested
1557 Token Generated for offer(s)
Token Shared 1560
1565 Offer Message Generated
1570 Offer Message Shared With Token
1572 Selects from multiple options, Response generated with token
1575 Response Message Shared With Token
1580 Message Authenticated
1582 Token Decoded
Requirements Met 1585
1590 Request Payment
1592 Payment Processed
Notifications and Updates 1595

FIG. 15

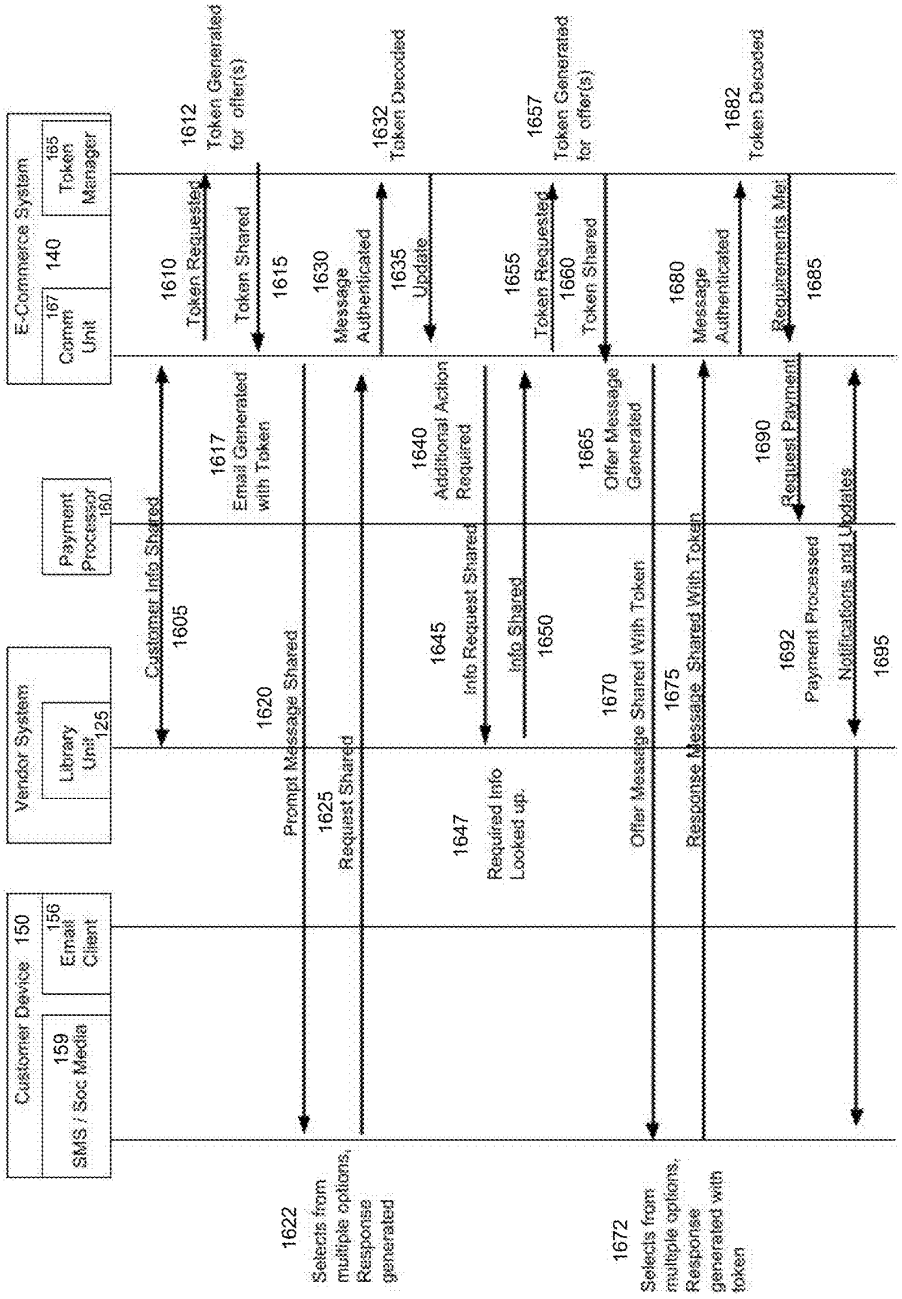

1600
Customer Device 150
SMS / Soc Media 159
Email Client 156
Vendor System
Library Unit 125
Payment Processor 160
E-Commerce System
Comm Unit 167
140
Token Manager 165
1605 Customer Info Shared
1610 Token Requested
1612 Token Generated for offer(s)
1615 Token Shared
1617 Email Generated with Token
1620 Prompt Message Shared
1622 Selects from multiple options, Response generated
1625 Request Shared
1630 Message Authenticated
1632 Token Decoded
1635 Update
1640 Additional Action Required
1645 Info Request Shared
1647 Required Info Looked up.
1650 Info Shared
1655 Token Requested
1657 Token Generated for offer(s)
1660 Token Shared
1665 Offer Message Generated
1670 Offer Message Shared With Token
1672 Selects from multiple options, Response generated with token
1675 Response Message Shared With Token
1680 Message Authenticated
1682 Token Decoded
1685 Requirements Met
1690 Request Payment
1692 Payment Processed
1695 Notifications and Updates

FIG. 16

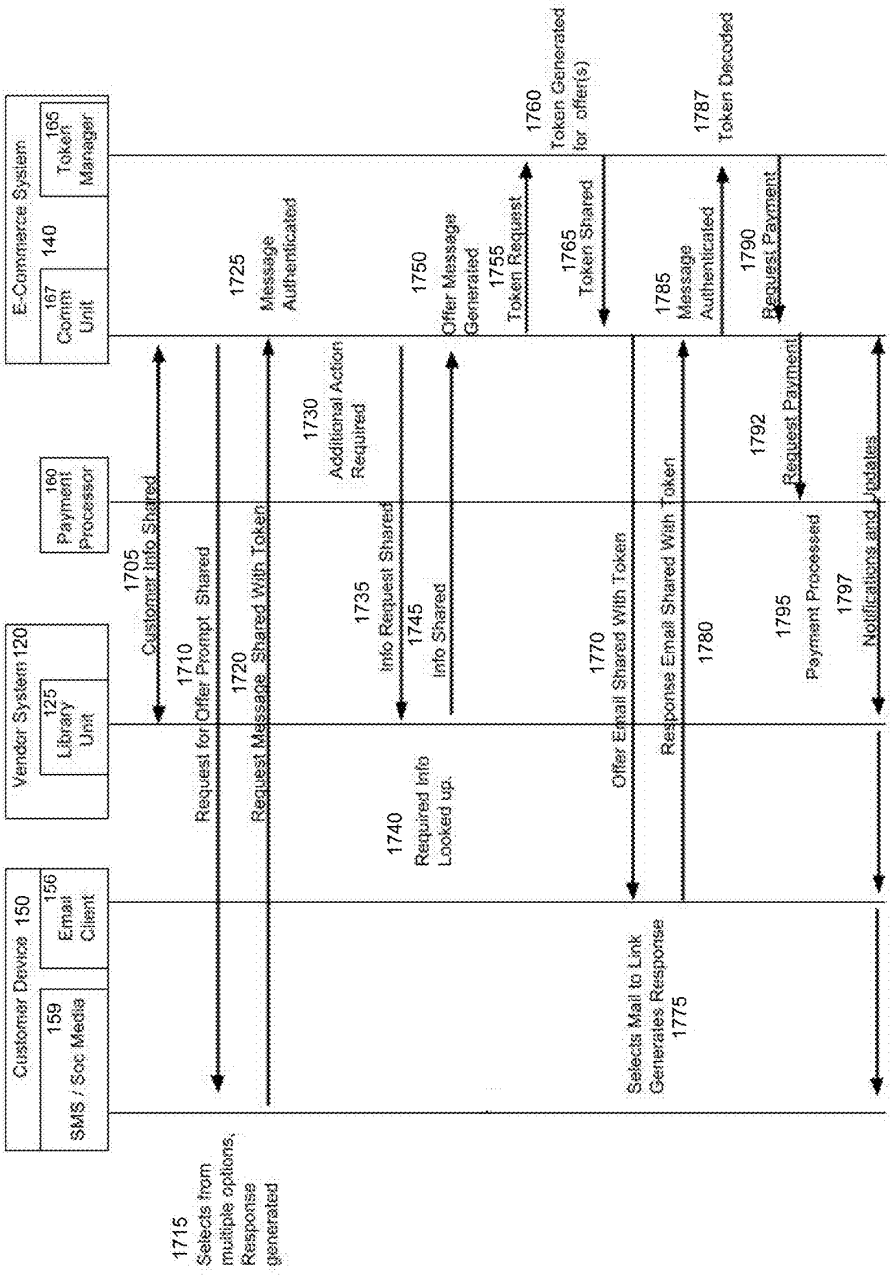

1700
Customer Device 150
SMS / Soc Media 159
Email Client 156
Vendor System 120
Library Unit 125
Payment Processor 160
E-Commerce System
Comm Unit 167
140
Token Manager 165
1705 Customer Info Shared
1710 Request for Offer Prompt Shared
1715 Selects from multiple options, Response generated
1720 Request Message Shared With Token
1725 Message Authenticated
1730 Additional Action Required
1735 Info Request Shared
1740 Required Info Looked up.
1745 Info Shared
1750 Offer Message Generated
1755 Token Request
1760 Token Generated for offer(s)
1765 Token Shared
1770 Offer Email Shared With Token
1775 Selects Mail to Link Generates Response
1780 Response Email Shared With Token
1785 Message Authenticated
1787 Token Decoded
1790 Request Payment
1792 Request Payment
1795 Payment Processed
1797 Notifications and Updates

FIG. 17

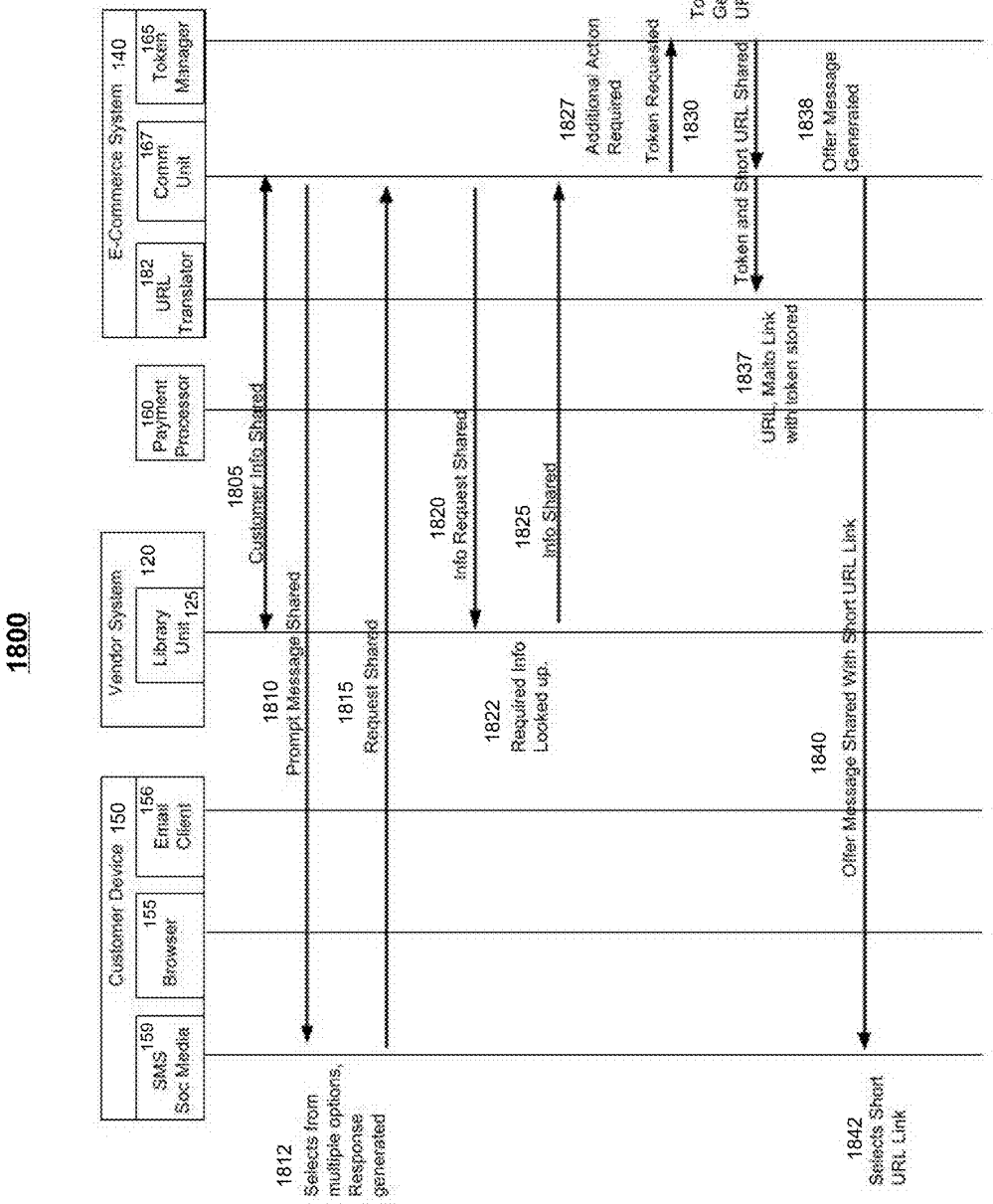

1800
Customer Device 150
SMS Soc Media 159
Browser 155
Email Client 156
Vendor System 120
Library Unit 125
160 Payment Processor
E-Commerce System 140
182 URL Translator
167 Comm Unit
165 Token Manager
1805 Customer Info Shared
1810 Prompt Message Shared
1812 Selects from multiple options, Response generated
1815 Request Shared
1820 Info Request Shared
1822 Required Info Looked up.
1825 Info Shared
1827 Additional Action Required
Token Requested 1830
1832 Token Generated, URL Applied
Token and Short URL Shared
1837 URL, Mailto Link with token stored
1838 Offer Message Generated
1840 Offer Message Shared With Short URL Link
1842 Selects Short URL Link

FIG. 18A

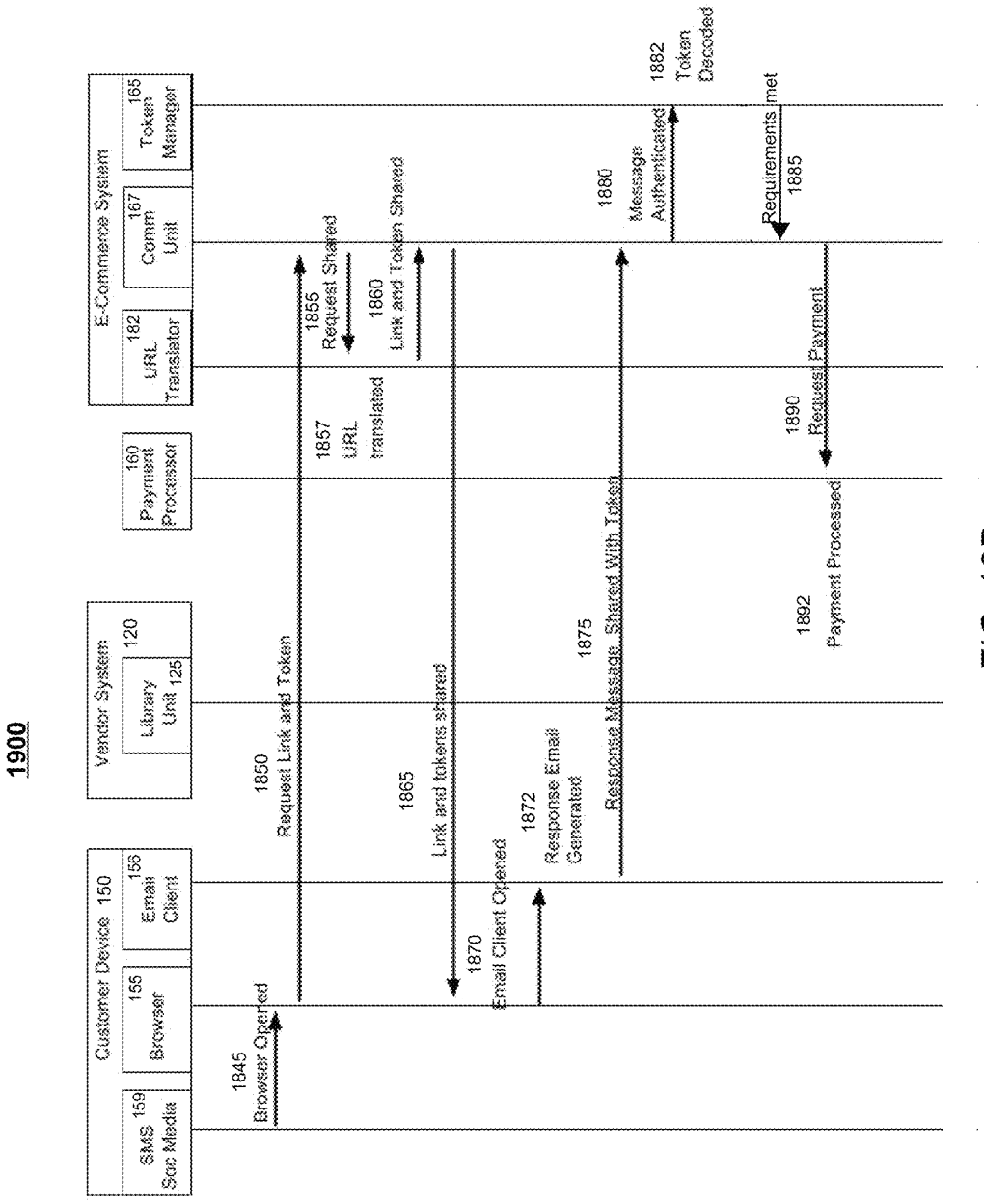

1900
Customer Device 150
SMS / Soc Media 159
Browser 155
Email Client 156
Vendor System
Library Unit 125
120
Payment Processor 160
E-Commerce System
URL Translator 182
Comm Unit 167
Token Manager 165
1845 Browser Opened
1850 Request Link and Token
1855 Request Shared
1857 URL translated
1860 Link and Token Shared
1865 Link and tokens shared
1870 Email Client Opened
1872 Response Email Generated
1875 Response Message Shared With Token
1880 Message Authenticated
1882 Token Decoded
1885 Requirements met
1890 Request Payment
1892 Payment Processed

FIG. 18B

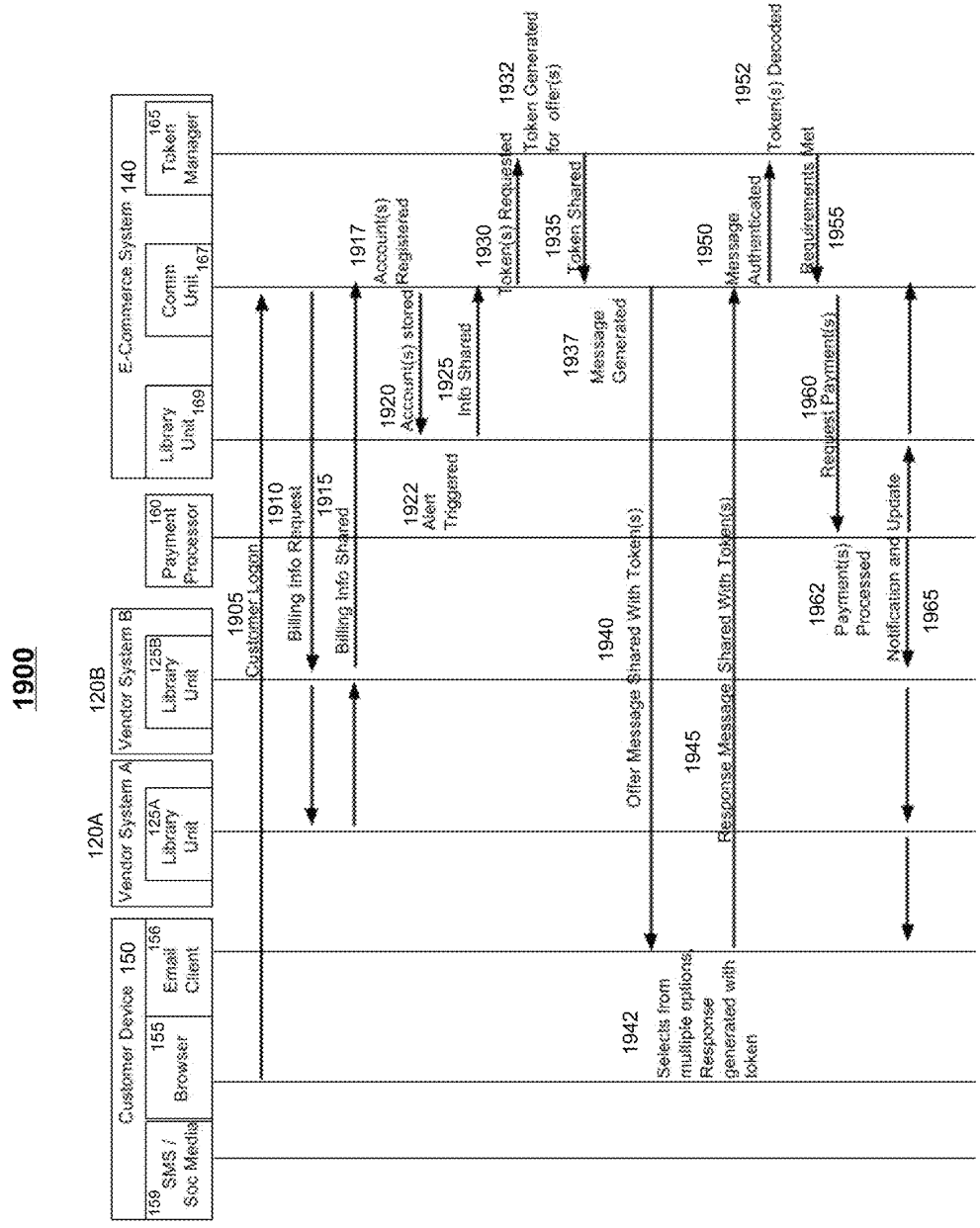

1900
120A
120B
Customer Device 150
159 SMS / Soc Media
155 Browser
156 Email Client
Vendor System A
125A Library Unit
Vendor System B
125B Library Unit
160 Payment Processor
E-Commerce System 140
Library Unit 169
Comm Unit 167
165 Token Manager
1905 Customer Logon
1910 Billing Info Request
1915 Billing Info Shared
1917 Account(s) Registered
1920 Account(s) stored
1922 Alert Triggered
1925 Info Shared
1930 Token(s) Requested
1932 Token Generated for offer(s)
1935 Token Shared
1937 Message Generated
1940 Offer Message Shared With Token(s)
1942 Selects from multiple options Response generated with token
1945 Response Message Shared With Token(s)
1950 Message Authenticated
1952 Token(s) Decoded
1955 Requirements Met
1960 Request Payment(s)
1962 Payment(s) Processed
Notification and Update
1965

FIG. 19

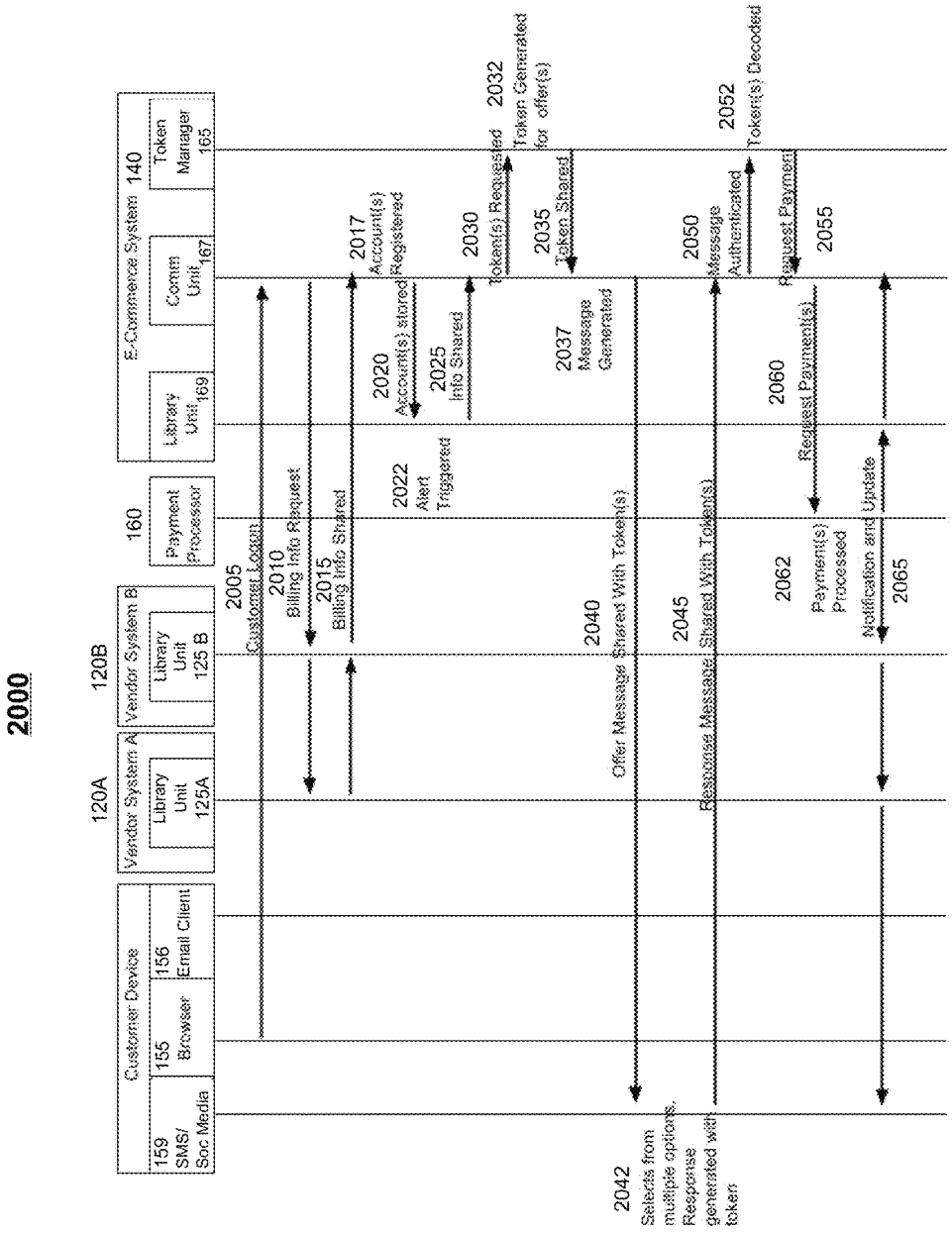

2000
Customer Device
159 SMS/ Soc Media
155 Browser
156 Email Client
120A
Vendor System A
Library Unit 125A
120B
Vendor System B
Library Unit 125 B
160
Payment Processor
E-Commerce System 140
Library Unit 169
Comm Unit 167
Token Manager 165
2005 Customer Login
2010 Billing Info Request
2015 Billing Info Shared
2017 Account(s) Registered
2020 Account(s) stored
2022 Alert Triggered
2025 Info Shared
2030 Token(s) Requested
2032 Token Generated for offer(s)
2035 Token Shared
2037 Message Generated
2040 Offer Message Shared With Token(s)
2042 Selects from multiple options, Response generated with token
2045 Response Message Shared With Token(s)
2050 Message Authenticated
2052 Token(s) Decoded
2055 Request Payment
2060 Request Payment(s)
2062 Payment(s) Processed
2065 Notification and Update

FIG. 20

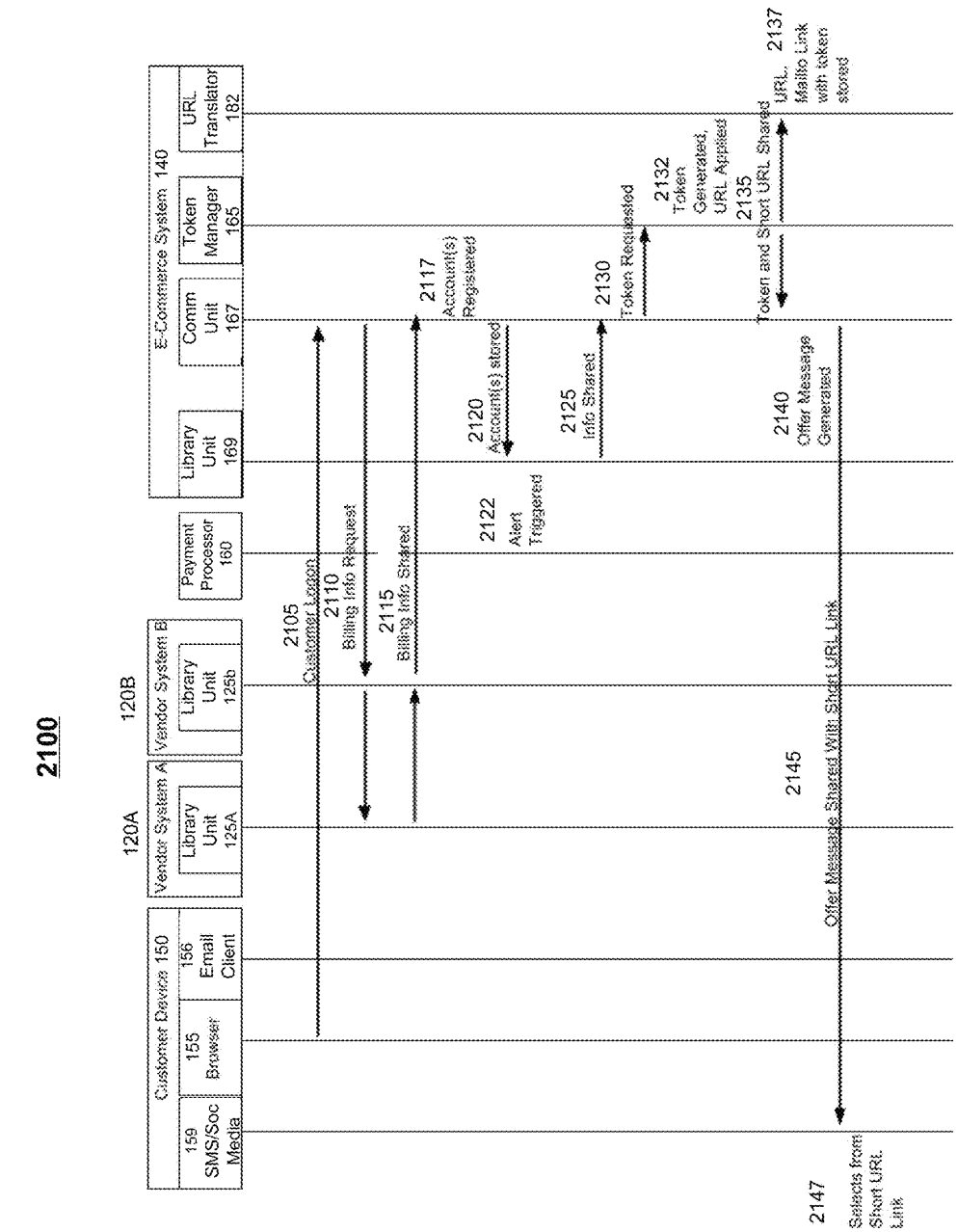

2100
Customer Device 150
159 SMS/Soc Media
155 Browser
156 Email Client
120A
Vendor System A
Library Unit 125A
120B
Vendor System B
Library Unit 125b
Payment Processor 160
E-Commerce System 140
Library Unit 169
Comm Unit 167
Token Manager 165
URL Translator 182
2105 Customer Logon
2110 Billing Info Request
2115 Billing Info Shared
2117 Account(s) Registered
2120 Account(s) stored
2122 Alert Triggered
2125 Info Shared
2130 Token Requested
2132 Token Generated, URL Applied
2135 Token and Short URL Shared
2137 URL, Mailto Link with token stored
2140 Offer Message Generated
2145 Offer Message Shared With Short URL Link
2147 Selects from Short URL Link

FIG. 21A

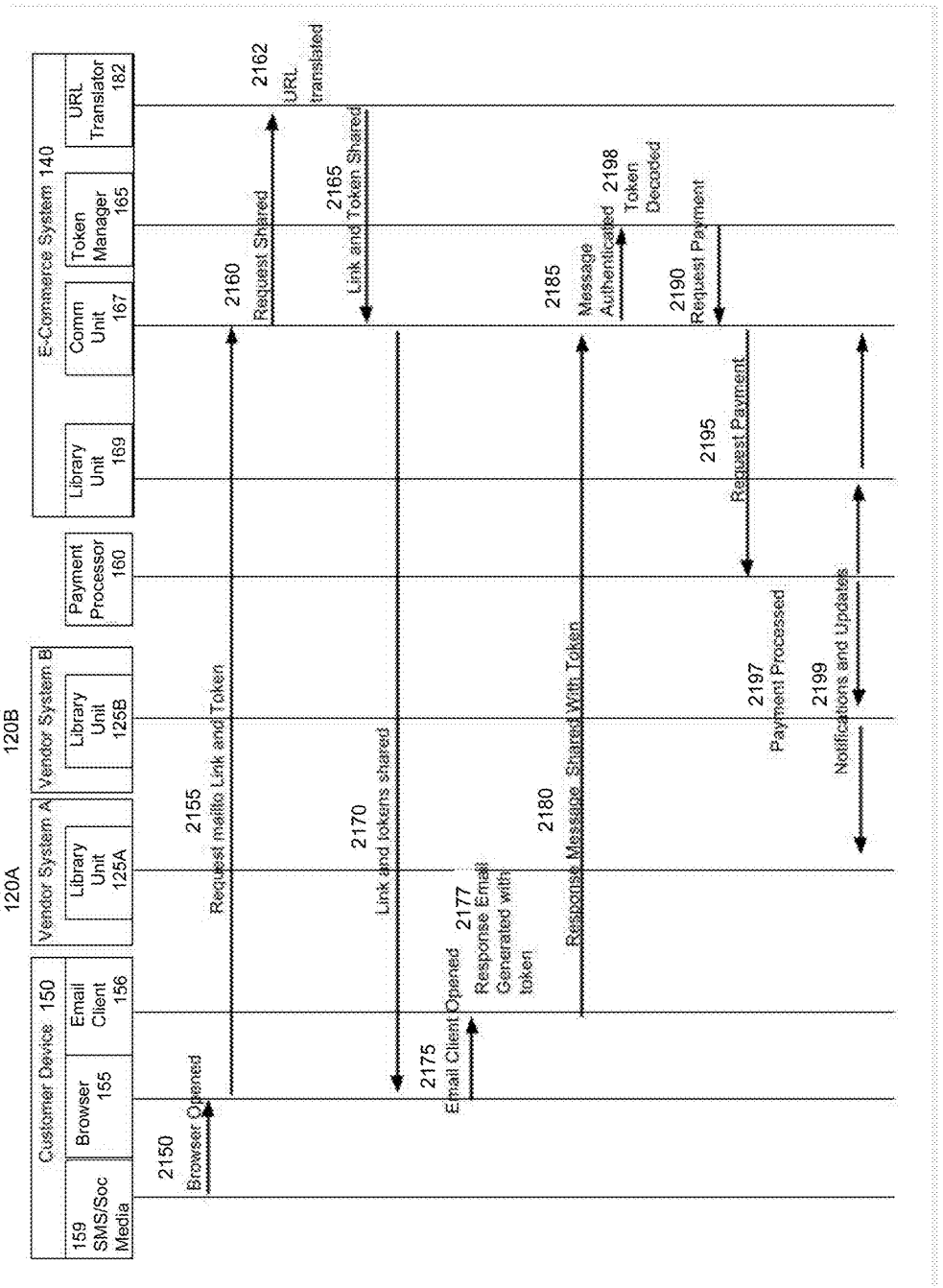

Customer Device 150
159 SMS/Soc Media
Browser 155
Email Client 156
120A
Vendor System A
Library Unit 125A
120B
Vendor System B
Library Unit 126B
Payment Processor 160
E-Commerce System 140
Library Unit 169
Comm Unit 167
Token Manager 165
URL Translator 182
2150 Browser Opened
2155 Request mailto Link and Token
2160 Request Shared
2162 URL translated
2165 Link and Token Shared
2170 Link and tokens shared
2175 Email Client Opened
2177 Response Email Generated with token
2180 Response Message Shared With Token
2185 Message Authenticated
2190 Request Payment
2195 Request Payment
2197 Payment Processed
2198 Token Decoded
2199 Notifications and Updates

FIG. 21B

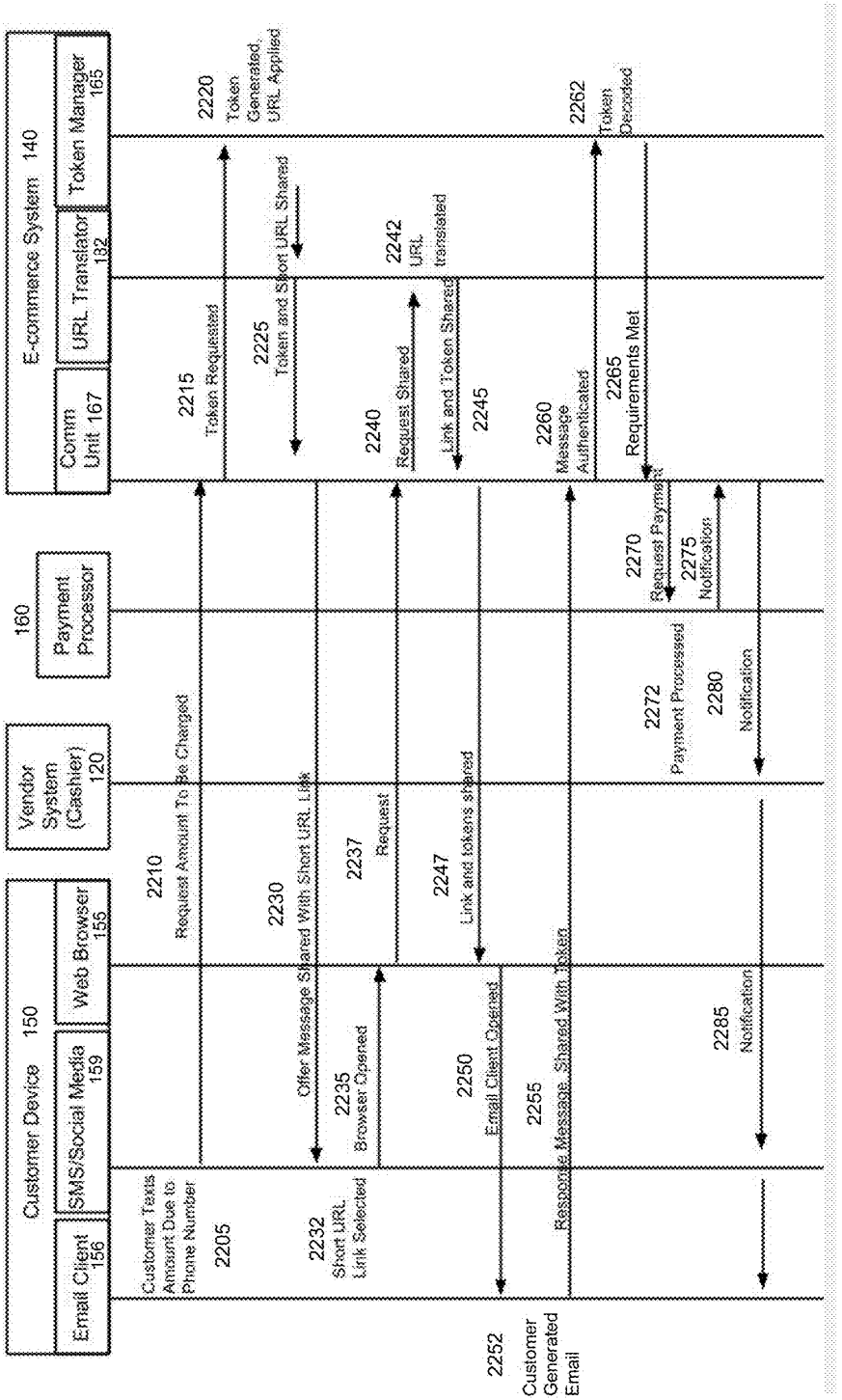

2200
Customer Device 150
Email Client 156
SMS/Social Media 159
Web Browser 155
Vendor System (Cashier) 120
160
Payment Processor
E-commerce System 140
Comm Unit 167
URL Translator 182
Token Manager 165
2205
Customer Texts Amount Due to Phone Number
2210
Request Amount To Be Charged
2215
Token Requested
2220
Token Generated, URL Applied
2225
Token and Short URL Shared
2230
Offer Message Shared With Short URL Link
2232
Short URL Link Selected
2235
Browser Opened
2237
Request
2240
Request Shared
2242
URL translated
2245
Link and Token Shared
2247
Link and tokens shared
2250
Email Client Opened
2252
Customer Generated Email
2255
Response Message Shared With Token
2260
Message Authenticated
2262
Token Decoded
2265
Requirements Met
2270
Request Payment
2272
Payment Processed
2275
Notification
2280
Notification
2285
Notification

FIG. 22A

2290

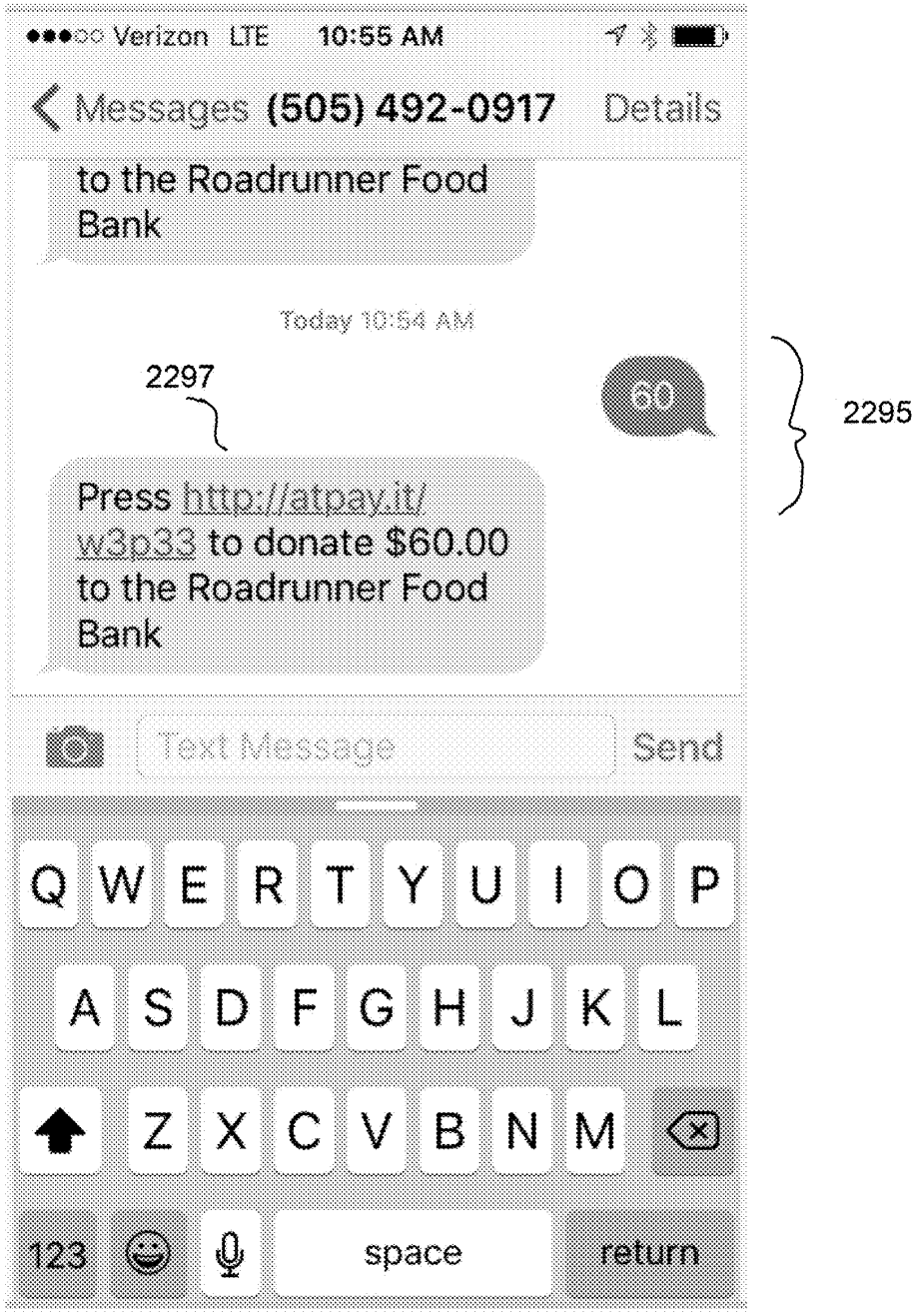

Verizon LTE 10:55 AM
Messages (505) 492-0917 Details
to the Roadrunner Food Bank
Today 10:54 AM
2297
60
2295
Press http://atpay.it/w3p33 to donate $60.00 to the Roadrunner Food Bank
Text Message
Send
Q W E R T Y U I O P
A S D F G H J K L
Z X C V B N M
123
space
return

FIG. 22B

2293

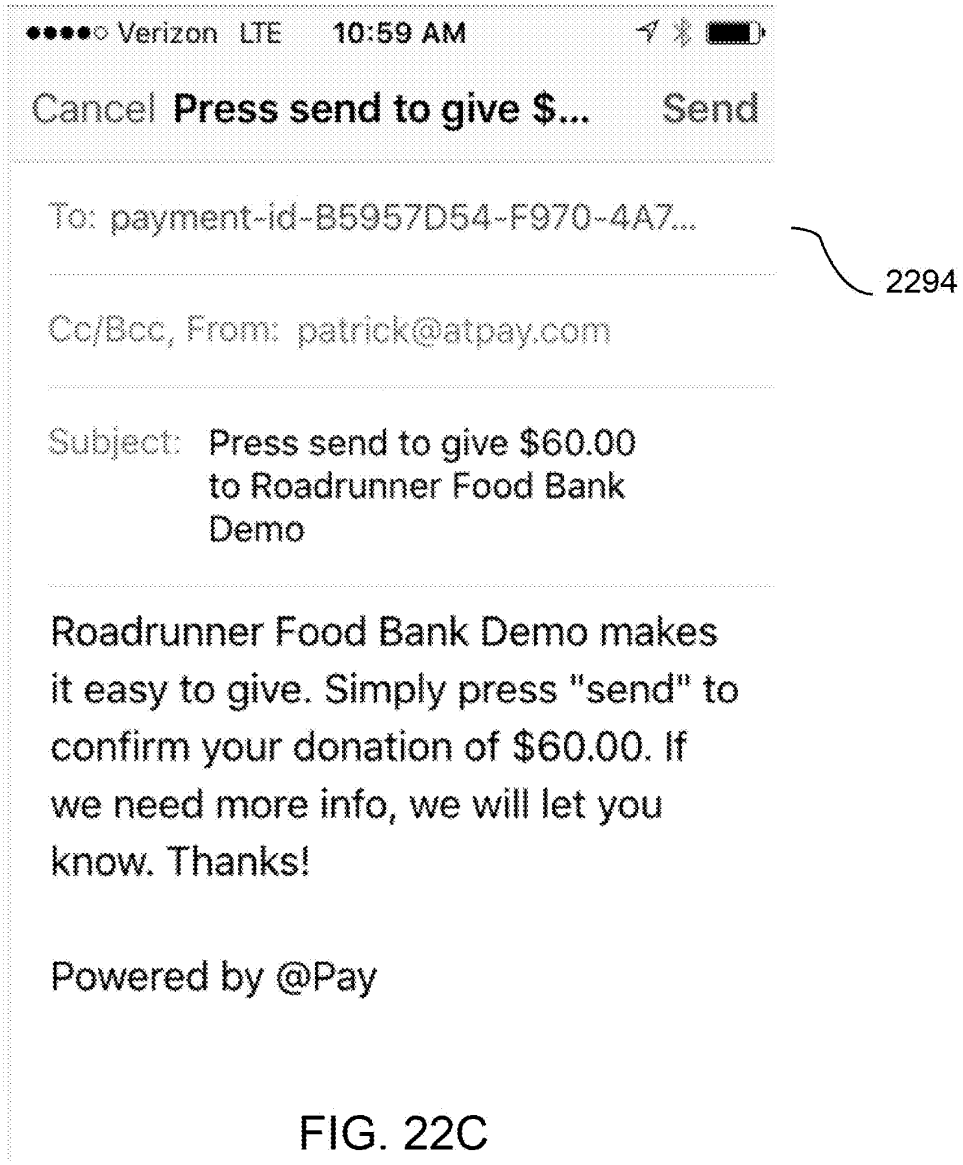

●●●●○ Verizon LTE 10:59 AM
Cancel Press send to give $... Send
To: payment-id-B5957D54-F970-4A7...
Cc/Bcc, From: patrick@atpay.com
Subject: Press send to give $60.00 to Roadrunner Food Bank Demo
Roadrunner Food Bank Demo makes it easy to give. Simply press "send" to confirm your donation of $60.00. If we need more info, we will let you know. Thanks!
Powered by @Pay
2294

FIG. 22C

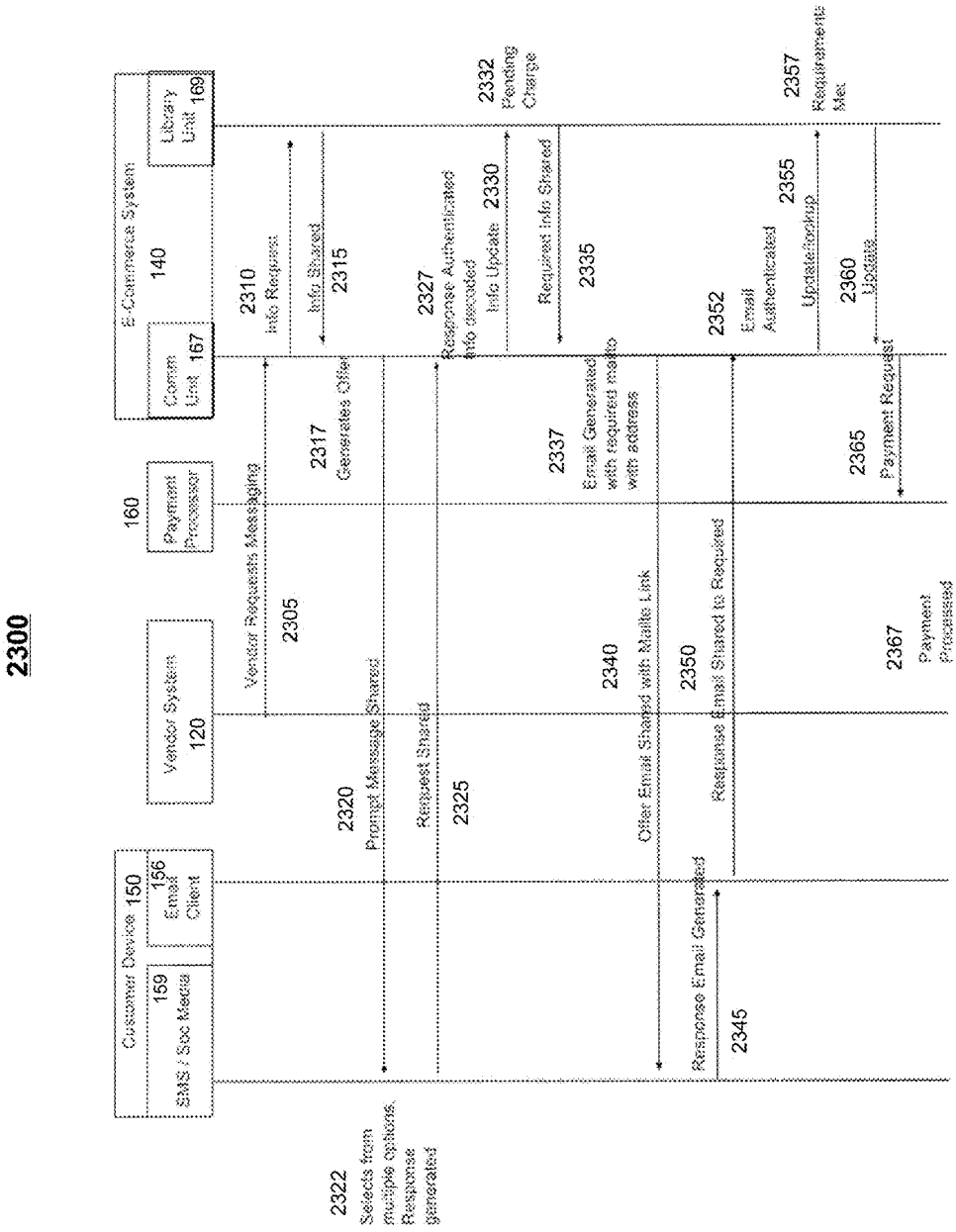

2300
Customer Device 150
SMS / Soc Media 159
Email Client 156
Vendor System 120
Payment Processor 160
E-Commerce System 140
Comm Unit 167
Library Unit 169
2305 Vendor Requests Messaging
2310 Info Request
2315 Info Shared
2317 Generates Offer
2320 Prompt Message Shared
2322 Selects from multiple options. Response generated
2325 Request Shared
2327 Response Authenticated Info decoded
2330 Info Update
2332 Pending Charge
2335 Request Info Shared
2337 Email Generated with required media with address
2340 Offer Email Shared with Mailto Link
2345 Response Email Generated
2350 Response Email Shared to Required
2352 Email Authenticated
2355 Update/Lookup
2357 Requirements Met
2360 Update
2365 Payment Request
2367 Payment Processed

FIG. 23

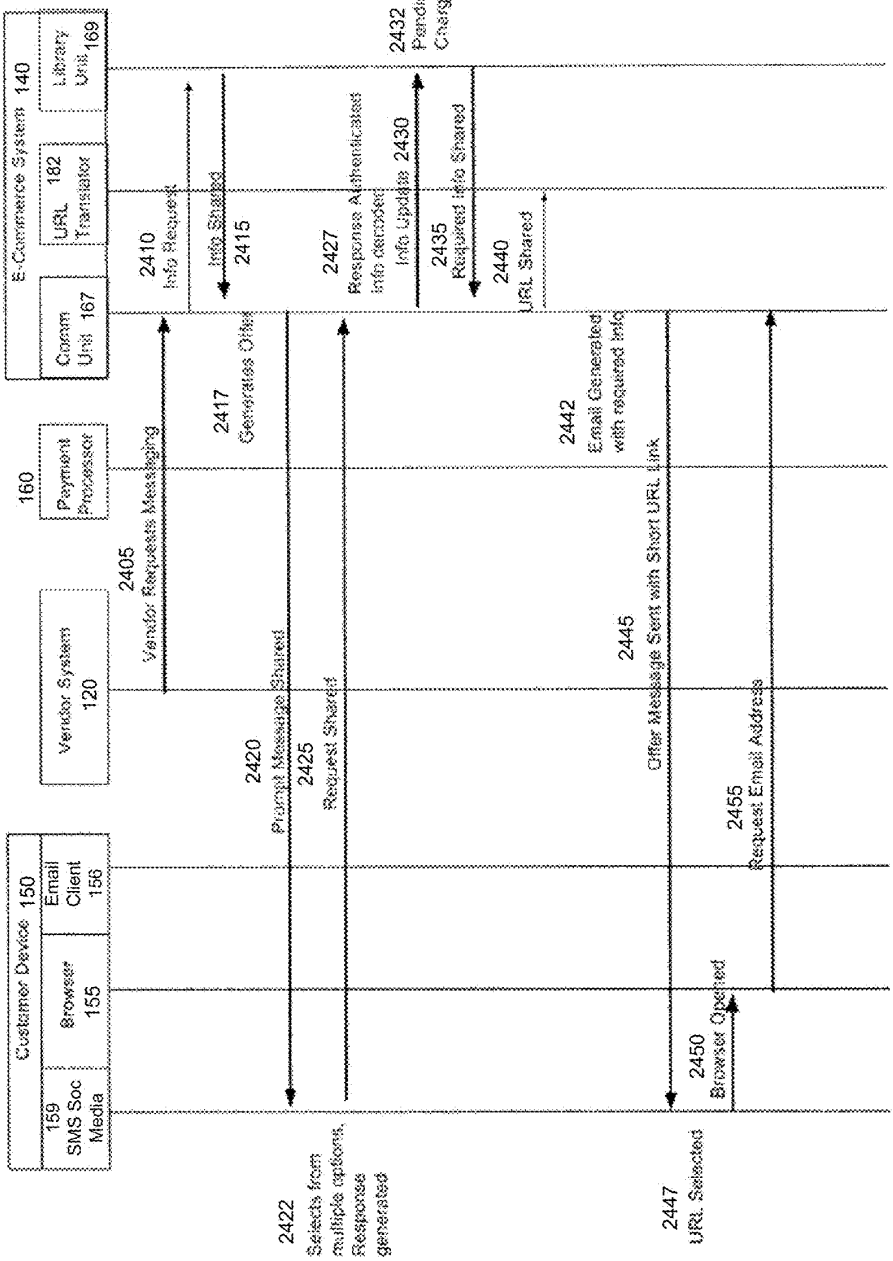

2400
Customer Device 150
159 SMS Soc Media
Browser 155
Email Client 156
Vendor System 120
160 Payment Processor
E-Commerce System 140
Comm Unit 167
URL Translator 182
Library Unit 169
2405 Vendor Requests Messaging
2410 Info Request
2415 Info Shared
2417 Generates Offer
2420 Prompt Message Shared
2422 Selects from multiple options, Response generated
2425 Request Shared
2427 Response Authenticates Info received
2430 Info Update
2432 Pending Charge
2435 Required Info Shared
2440 URL Shared
2442 Email Generated with required info
2445 Offer Message Sent with Short URL Link
2447 URL Selected
2450 Browser Opened
2455 Request Email Address

FIG. 24A

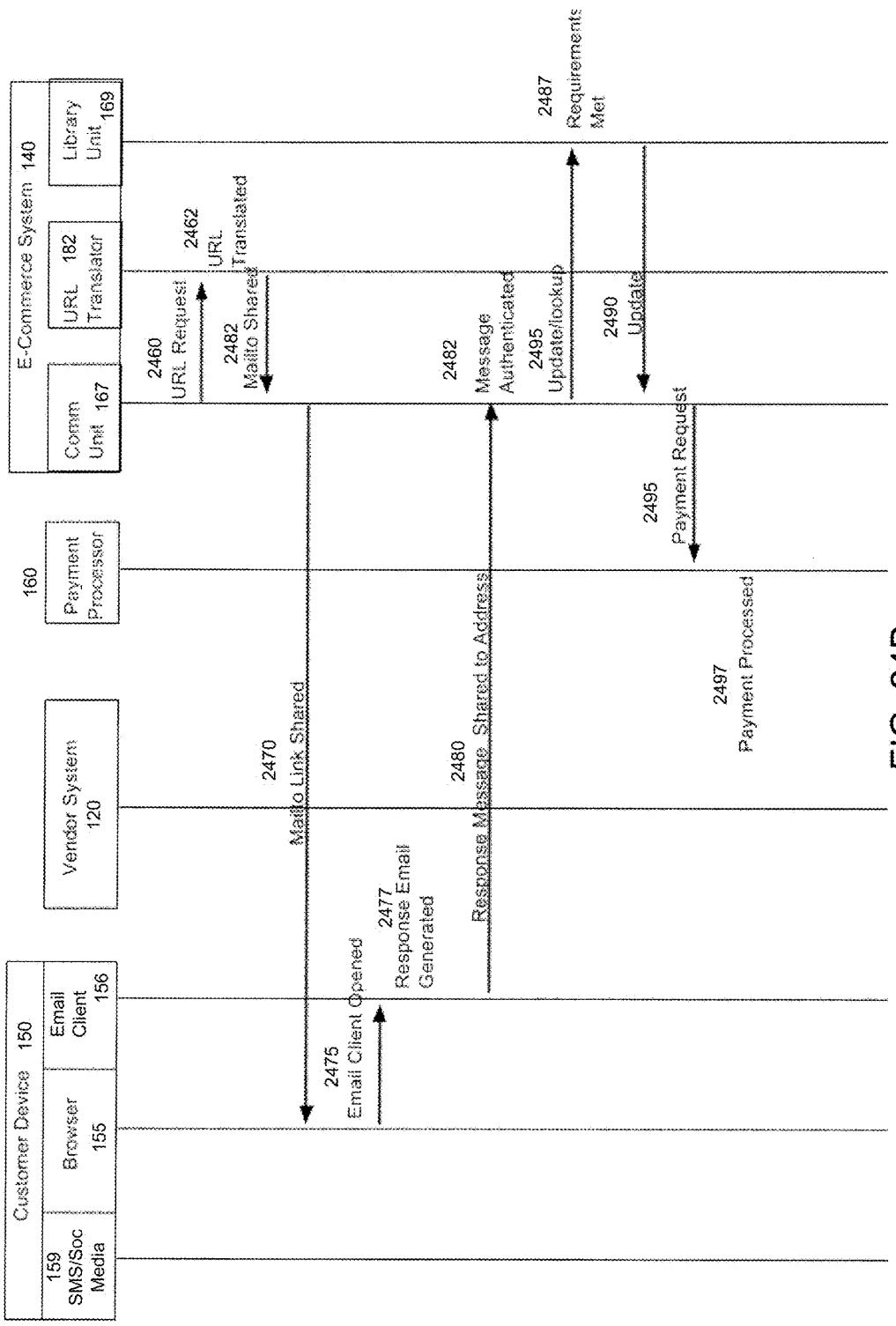

Customer Device 150
159 SMS/Soc Media
Browser 155
Email Client 156
Vendor System 120
160 Payment Processor
E-Commerce System 140
Comm Unit 167
URL Translator 182
Library Unit 169
2460 URL Request
2462 URL Translated
2470 Mailto Link Shared
2475 Email Client Opened
2477 Response Email Generated
2480 Response Message Shared to Address
2482 Mailto Shared
2482 Message Authenticated
2487 Requirements Met
2490 Update
2495 Update/lookup
2495 Payment Request
2497 Payment Processed

FIG. 24B

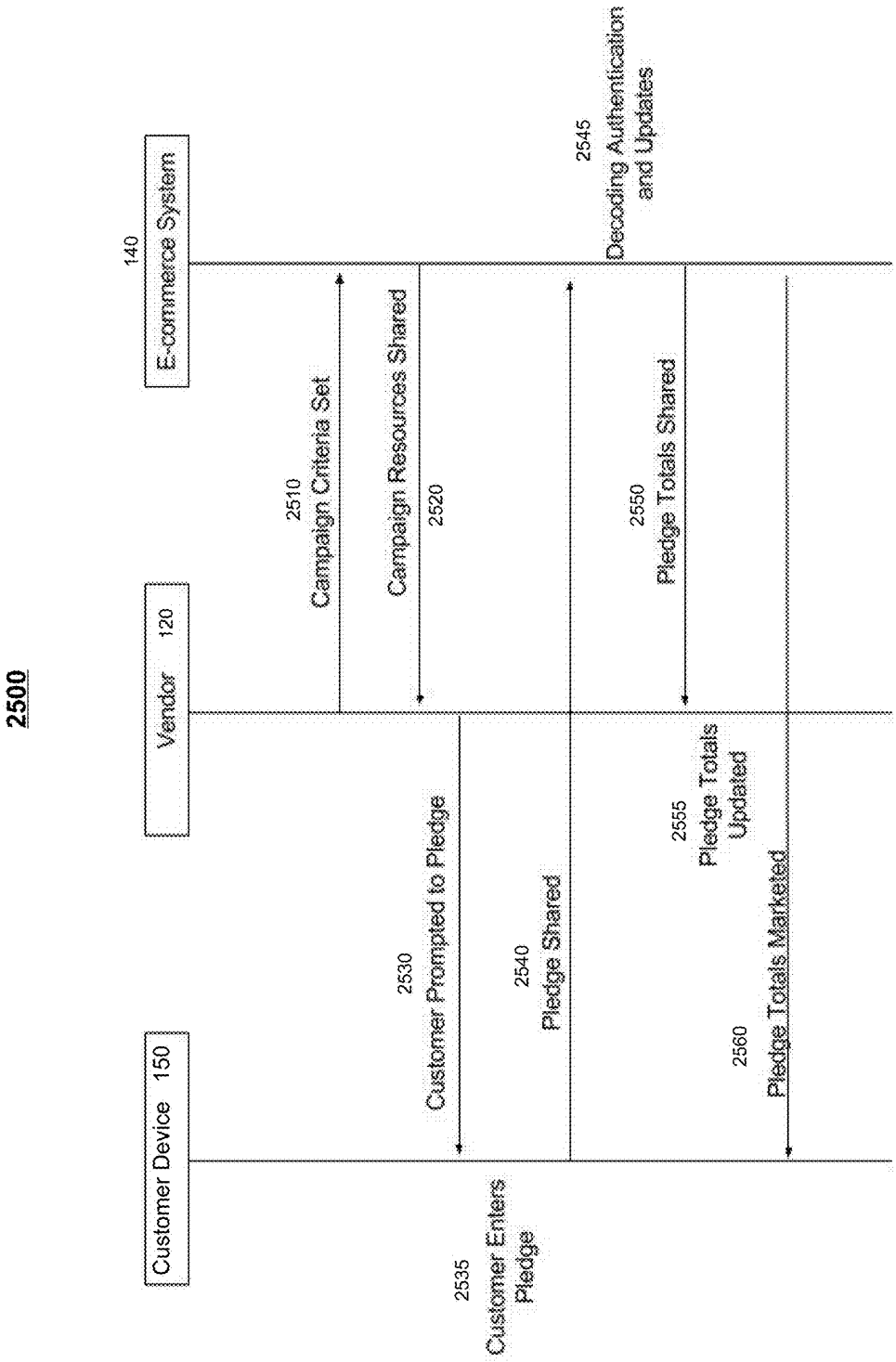

2500
Customer Device 150
Vendor 120
E-commerce System 140
2510 Campaign Criteria Set
2520 Campaign Resources Shared
2530 Customer Prompted to Pledge
2535 Customer Enters Pledge
2540 Pledge Shared
2545 Decoding Authentication and Updates
2550 Pledge Totals Shared
2555 Pledge Totals Updated
2560 Pledge Totals Marketed

FIG. 25

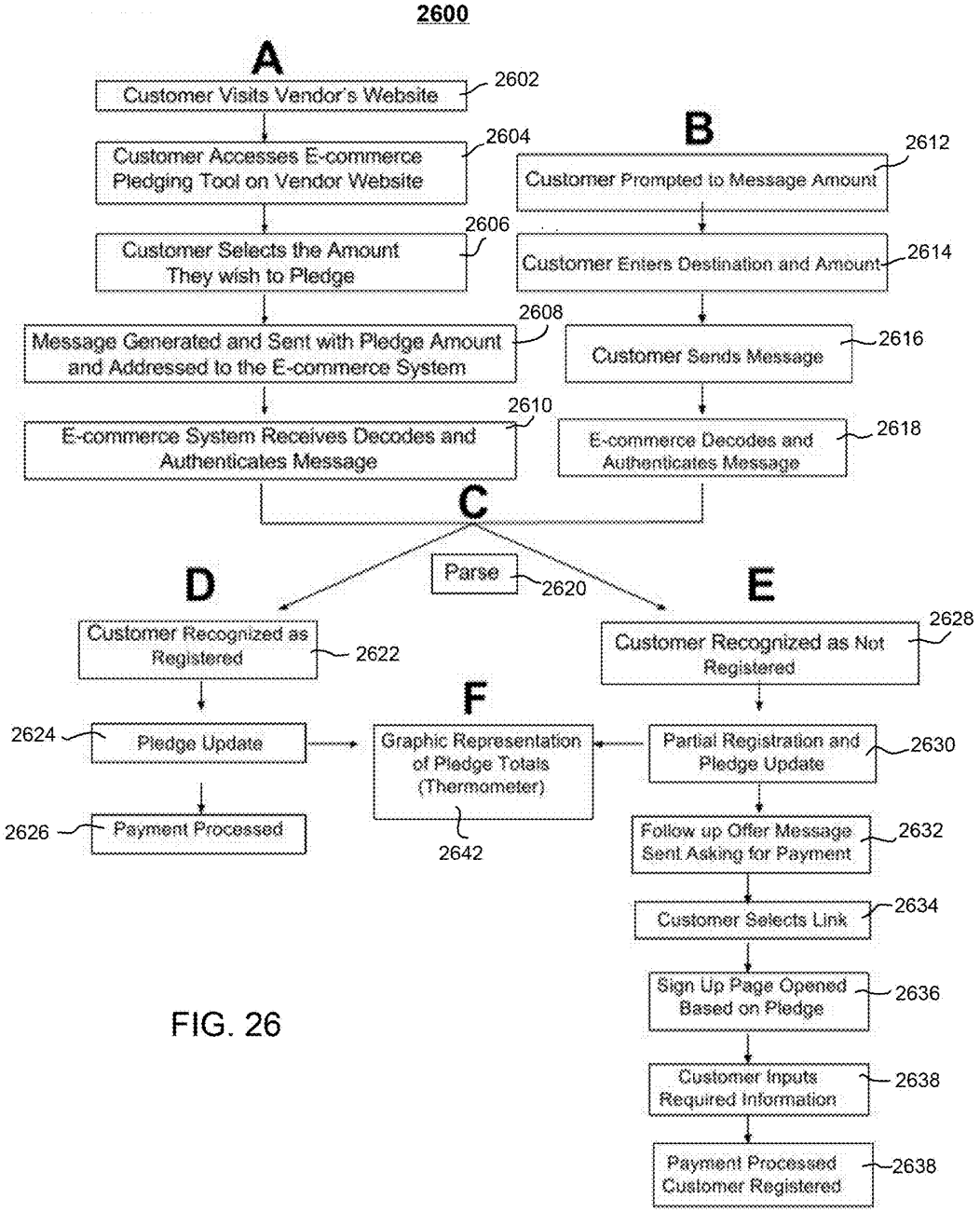

2600
A
Customer Visits Vendor's Website
2602
Customer Accesses E-commerce Pledging Tool on Vendor Website
2604
Customer Selects the Amount They wish to Pledge
2606
Message Generated and Sent with Pledge Amount and Addressed to the E-commerce System
2608
E-commerce System Receives Decodes and Authenticates Message
2610
B
Customer Prompted to Message Amount
2612
Customer Enters Destination and Amount
2614
Customer Sends Message
2616
E-commerce Decodes and Authenticates Message
2618
C
Parse
2620
D
Customer Recognized as Registered
2622
2624
Pledge Update
2626
Payment Processed
E
Customer Recognized as Not Registered
2628
F
Graphic Representation of Pledge Totals (Thermometer)
2642
Partial Registration and Pledge Update
2630
Follow up Offer Message Sent Asking for Payment
2632
Customer Selects Link
2634
Sign Up Page Opened Based on Pledge
2636
Customer Inputs Required Information
2638
Payment Processed Customer Registered
2638

FIG. 26

MYRIAD OF PAYMENT METHODS WITH ALTERNATE PAYMENT CONTROLS

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Patent Application No. 62/191,841, entitled SMS, SOCIAL MEDIA, AND EMAIL-BASED PAYMENT WITH ALTERNATE PAYMENT CONTROLS, filed on Jul. 13, 2015 and U.S. Provisional Patent Application No. 62/205,511, entitled SMS, SOCIAL MEDIA, AND EMAIL-BASED PAYMENT WITH INTERACTIVE, SHOPPING CART AND POINT OF CASHIER CONTROLS, filed Aug. 14, 2015, which are incorporated by reference as if fully set forth.

FIELD OF INVENTION

The present invention is related to electronic commerce systems. More particularly, the present invention provides technological improvements to electronic commerce system. The present system and method facilitate electronic commerce by using one or more forms of Short Message Service (SMS), social media, email, scheduling applications, interactivity and point of sale cashier.

BACKGROUND

Mobile devices, such as smartphones, are becoming more and more advanced and providing more and more connectivity. Users want to connect to account using multiple different devices. These devices have become a technology which ties together many forms of communication into a single or set of customer devices. Multiple forms of messaging may occur on the same device for a single customer. Mobile devices have become a technology which aggregates many forms of communication into a single customer device, or set of linked customer devices such as a smartphone, a tablet, and a laptop. Text-based messaging on mobile devices is quickly becoming more popular than voice conversations. Customers prefer short continual text based conversations.

Mobile devices offer an increasing number of methods to make payments. Many vendors collect single point contacts in order to facilitate a payment. Vendors who collect an array of contacts generally do this for security. One form of electronic payment that may be performed is short message system (SMS). Generally, SMS payments are provided by the carrier with the carrier processing the payment. The carrier is the only source to process a payment using SMS and carrier fees tend to be high. Additionally, donating or purchasing via SMS often provides no receipt. The confirmation of payment is noted on the customer's phone bill.

Paying bills and making monthly donations for many customers is a hassle, with each vendor requiring a separate method of payment or sign up. The use of electronic wallets is growing in popularity; however, it is still fraught with problems. SMS payment methods offer a quick and easy way to make a payment of a specific amount. With most customers use multiple messaging forms to communicate, SMS as a payment method is increasingly shown as an insecure method for making a payment and is easily hacked. Therefore, a need exists for technology that enhances the myriad of technology available on mobile and other electronic devices, including SMS, social media and e-mail-based payments, to make payments and donations and provide alternate payment controls including interactive, shopping carts, point of cashier controls, and other alternative payment controls.

SUMMARY

A system and method for providing an email as a command is disclosed. The system and method include formatting an action in an e-commerce system based on an assigned address, wherein communication with the assigned address initiates the action, and authenticating a message addressed to the assigned address, wherein for a positively authenticated message the action is performed. The authenticating of the message is based on the address where the message originated. The address where the message originated is associated with a sender of the message. The message may be an email message or a Short Message Service (SMS) message. The system and method may also include receiving the message sent to the assigned address. A sender of the message may be a customer using a customer device. The formatting of the action may be initiated based on a request from a vendor. For negatively authenticated messages, the system and method include providing a sender of the message a sign-up to enable positive authentication such as by providing a Universal Resource Locator (URL) link. The system and method may include requesting details of the action based on the message. The details may be requested from a vendor. The system and method may include sending an invoice for the action to the address that sent the authenticated message and processing a payment based on a response to the sent invoice. The system and method may include authenticating the response to the sent invoice before processing the payment.

A system and method for sending payment reminders in conjunction with a calendar application on a mobile device is also disclosed. The system and method include receiving a vendor request of a payment prior to a date the payment is due on a mobile device, accepting an invitation to make the payment and adding the payment to a calendar application with an alert for the date on which the payment is to be paid, the alert including a mailto link, requesting, from an e-commerce system, a token to enable the payment to be made to the vendor, the token being update to identify the vendor and the payee and included in the calendar application alert, and activating an alert message mailto link to generate a response, the response including the token and being sent to the e-commerce system wherein the e-commerce system is configured to receive the message and token causing a notification to be sent to the vendor to process the payment.

BRIEF DESCRIPTION OF THE DRAWINGS

A more detailed understanding may be had from the following description, given by way of example in conjunction with the accompanying drawings wherein:

FIG. **1** illustrates a system diagram of an Email-Based E-commerce System;

FIG. **2** illustrates an example email message that solicits the purchase of goods from a vendor;

FIG. **3** illustrates an email message for placing an order;

FIG. **4** illustrates an advertisement email message that solicits a donation;

FIG. **5** illustrates an email message for ordering a donation;

FIG. **6**A is a transactional flow diagram illustrating the process for an electronic message payment with a vendor as determined payment processor;

FIG. **6**B is a transactional flow diagram illustrating the process for an SMS payment bypassing the carrier by using an email response with a vendor determined payment processor;

FIG. **7** illustrates a flow diagram depicting a signup process that collects the information to assist in avoiding carrier billing charges;

FIG. **8**A is an illustration of a method depicting a vendor requesting an email address associated with a command;

FIG. **8**B is an illustration of a transactional flow diagram illustrating a processes where a customer using customer device sends a command email addressed to a destination associated with a specific assigned action;

FIG. **9** is an illustration outlining different methods for the e-commerce system responding to a payment request from a customer device based on the customer's registration status with the e-commerce system and vendor;

FIG. **10**A is a transactional flow diagram that illustrates a process where a calendar application is integrated with the e-commerce system enabling payment messages to be generated from reminders or alerts as part of the function of the calendar application;

FIG. **10**B illustrates an example of a calendar application;

FIG. **11** illustrates a diagram depicting the process for an interactive messaging system facilitating payment;

FIG. **12** is a transactional flow diagram illustrating an interactive call and response method implemented in e-commerce system;

FIG. **13** is a transactional flow diagram illustrating the use of a short URL with token authentication in e-commerce system;

FIG. **14** is a diagram illustrating a tiered response for interaction in the present system;

FIG. **15** is a transactional flow diagram illustrating a method where the e-commerce system accesses a vendor library of customer shopping cart activity to message a series of choices to offer an email based checkout;

FIG. **16** is a transactional flow diagram illustrating a method where the e-commerce system accesses a vendor library of customer shopping cart activity to message a series of choices to the customer and based on customer responses offer a SMS or social media based checkout;

FIG. **17** is a transactional flow diagram illustrating a method where the e-commerce system may access a vendor library of customer shopping cart activity to message a series of choices to the customer device via SMS and social media and based on customer responses offer a an email-based checkout;

FIGS. **18**A and **18**B collectively illustrate a transactional flow diagram illustrating a method where the e-commerce system accesses the library of customer shopping cart activity to message a series of prompts to the customer device and based on customer responses via the customer device, the e-commerce system completes the transaction via email;

FIG. **19** is an illustration of a transactional flow diagram illustrating the processes where a customer via a customer device may request the e-commerce system to aggregate multiple payment schedules and send payment email reminders;

FIG. **20** is an illustration of a transactional flow diagram illustrating the processes where a customer via a customer device may request the e-commerce system to aggregate multiple payment schedules and send payment reminders via SMS or social media;

FIGS. **21**A and **21**B collectively illustrate a transactional flow diagram illustrating the process where a customer via customer device requests the e-commerce system to aggregate multiple payment schedules and send SMS or social media reminders to enable customers via customer device to generate response payment emails;

FIG. **22**A is a transactional flow diagram explaining the in-store or mass assembly process where a payment is made by SMS and social media with an email-based checkout;

FIG. **22**B illustrates a message of an SMS message where the customer messages the amount they wish to pay or $60;

FIG. **22**C illustrates an example of the response email;

FIG. **23** is transactional flow diagram illustrating a request for payment by SMS and/or social media with an email-based payment method using the mailto link in a SMS and/or social media post not requiring a token;

FIGS. **24**A and **24**B collectively is a transactional flow diagram illustrating a request for payment by SMS and/or social media with an email-based payment method using a short URL link in a SMS and/or social media post;

FIG. **25** is a transactional flow diagram illustrating the process where a customer uses customer device to pledge to make a payment and the vendor may use those totals for marketing and payment; and

FIG. **26** illustrates a method configured to allow a customer to make a pledge.

DETAILED DESCRIPTION OF THE EMBODIMENTS

All embodiments described below may be used in tandem or in relation to specific vendor or customer needs. They may also be integrated with an email service provider, customer relationship management, or directly with a payment processor. Payment processing may occur in any number of ways using multiple gateways, banks, credit cards, debit cards, gift cards, direct carrier billing, automatic clearing houses, or virtual currency. Although the description below focuses on the use of Short Message Service (SMS), email messaging and social media networks may also be used. Although the examples and discussion herein generally use SMS, other texting formats may be substituted for SMS including Extensible Markup Language (XMPP), Session Initiation Protocol (SIP), Voice over Internet Protocol (ViOP), multimedia messaging service (MMS), Messaging Queuing Telemetry Transport (MQTT), and Apple Push Notification Service (APNS) used in services such as Whatsapp, Viber, Facebook Messenger, iMessage and other forms Internet Telephony Protocols. The configuration of the system may vary accordingly.

The described system and method collects multiple contacts from each customer allowing greater flexibility and security in payment processing and offers greater choice and flexibility in the method of payment. The described system and method may authenticate an SMS payment request and process a payment without the aid of the phone carrier. The present system and method may provide customers with immediate receipts required for taxes and expenses. The described system and method may integrate payment options via SMS, social media, email, and web-based checkouts with other applications such as calendar applications. The present system and method may allow for seamless transitions from one communication format to another on mobile devices. The present system and method using different formats of communication to confirm transactions and act as a fail-safe to confirm a customer's identity online provides greater security. The described system and method provides product information via Short Message Service (SMS) or social media, with short prompted responses to determine a customer's desired purchase and process their

payment. The present system and method consolidates a customer's payments into a single message and response. The present system and method provides cashiers in brick and mortar stores, who can offer a method for paying a specific amount by using SMS to message a phone number, offer a simple straightforward method to make a payment using their mobile phone. The present system and method maintains the ease of SMS with the security of other media. The present system and method exploits the capacity to shift between messaging applications, to heighten security, and increase convenience.

A method and apparatus disclosed herein configures the E-commerce System, such as an Email Payment Gateway, also referred to as the e-commerce system, to enable vendors to send emails to customers allowing customers to make payments for specific amounts by selecting mailto hyperlinks associated with each amount and sending the email to the e-commerce system. Each mailto link holds a token generated by the e-commerce system. The e-commerce system may validate and authenticate the email and decode the token. This system may be integrated with SMS and Social Media messaging. The e-commerce system is designed to give customers a fluid relationship between different modes of messaging with the goal of completing a secure payment. The system and method provide an interactive experience to customers allowing the customer greater choice and ease in purchase.

An e-commerce system to facilitate transactions between a customer and a vendor is disclosed. FIG. **1** illustrates a system diagram of an email based e-commerce system that integrates SMS, social media, email with interactive messaging, and in store cashier applications for online e-commerce payment processing, and calendar applications for online e-commerce payment processing, pledging and alternate payment control.

FIG. **1** illustrates a system diagram of an Email-Based E-commerce System **100**. The Email-Based E-commerce System **100** may integrate SMS and social media for online e-commerce. It describes the integration of investment portfolio management and bill payment. FIG. **1** shows an example system **100** that may be used for vendor token generation that may be used in e-commerce transactions. The example system **100** includes a customer device **150**, a vendor server **120**, an e-commerce system **140**, a banking server (not shown), a payment processing system **160**, and an email service provider **170** that may communicate over one or more wired and/or wireless communication networks **110**. The wired or wireless communication networks **110** may be public, private or a combination of public or private networks.

The customer device **150** may be, for example, a cellular phone, a smartphone, a desktop computer, a laptop computer, a tablet computer, or any other appropriate computing device. The customer device **150** may utilize short message service (SMS) messages, multimedia messaging service (MMS), social media apps, web browsing, and or email. For example, social media apps may include Facebook, Twitter, GooglePlus+, LinkedIn, Instagram, Pinterest, Swapchat, Tumblr, and the like. The customer device **150** includes a processor **151**, memory **152**, a communications unit **153**, a display unit **154**, a web browser unit **155**, which may communicate data to/from the web server module(s) in the vendor server **120** and payment server **160**, email client **156**, and near field communication (NFC) reader **157**. The web browser unit **155** may include and/or communicate with one or more sub-modules that perform functionality such as rendering HTML (including but not limited to HTML5), rendering raster and/or vector graphics, executing JAVASCRIPT, and/or rendering multimedia content.

Alternatively or additionally, the web browser unit **155** may implement Rich Internet Application (RIA) and/or multimedia technologies such as ADOBE FLASH and/or other technologies compatible with Internet based communications. The web browser unit **155** may implement RIA and/or multimedia technologies using one or web browser plug-in modules (e.g., ADOBE FLASH), and/or using one or more sub-modules within the web browser unit **155** itself. The web browser unit **155** may display data on one or more display devices (not depicted) that are included in, or connected to, the customer device **150**, such as a liquid crystal display (LCD) display or monitor. The customer device **150** may receive an input from a user from an input device (not depicted) that is included in, or connected to, the customer device **150**, such as a keyboard, a mouse, a microphone or a touch screen, and provide data that indicates the input to the web browser unit **155**.

The customer device **150** may also include a calendar unit or calendar application, and a messaging unit, also referred to as a SMS or social media application **159**.

Calendar unit **158** may also include or be referred to as calendar software or a calendar application. Calendar unit **158** may include calendaring software that at least includes or provides users with an electronic version of a calendar. Additionally, the software may provide an appointment book, address book, and/or contact list. These tools are an extension of many of the features provided by time management software such as desk accessory packages and computer office automation systems. Calendaring is a standard feature of many PDAs, EDAs, and smartphones. The software may be stored or house locally on a computing device or customer device **150**, often designed for individual use, e.g. Lightning extension for Mozilla Thunderbird, Microsoft Outlook without Exchange Server, or Windows Calendar, or may be a networked-based software that allows for the sharing of information between users, e.g. Mozilla Sunbird, Windows Live Calendar, Google Calendar, or Microsoft Outlook with Exchange Server.

SMS or social media application **159** may be any application that provides access to texting including SMS or to social media application wither directly or using a web link.

The vendor system **120** may include a web server **121**, order execution unit **122**, an email system provider **123**, customer account info **124**, a library unit **125**, and an NFC handler **126**. The vendor system may be substituted for a financial management system as illustrated in the examples described herein.

The web server **121** provides a website that may be accessed by a customer device **150**. The web server **121** may implement HTTP protocol, and may communicate Hypertext Markup Language (HTML) pages and related data from the website to/from the customer device **150** using HTTP. The vendor server **120** may be connected to one or more private or public networks (such as the Internet), via which the web server **121** communicates with devices such as the customer device **150**. The web server **121** may generate one or more web pages, may communicate the web pages to the customer device **150**, and may receive responsive information from the customer device **150**.

The web server **121** may be, for example, an NGINX server, an APACHE HTTP server, a SUN-ONE Web Server, a MICROSOFT INTERNET Information Services (IIS) server, and/or may be based on any other appropriate HTTP server technology. The vendor server **120** may also include one or more additional components or modules (not

depicted), such as one or more load balancers, firewall devices, routers, switches, and devices that handle power backup and data redundancy.

The vendor system **120** may also include one or more additional components or modules (not depicted), such as one or more load balancers, firewall devices, routers, switches, and devices that handle power backup and data redundancy.

The order execution unit **122** is configured to receive instructions included in received messages and executes orders on behalf of the vendor system **130**.

The memory may be configured to store information associated with e-commerce transactions. This may include inventory information, information used to generate web pages, customer information, and other e-commerce data.

The e-commerce system **140** may include a token generator **141**, a purchase execution module **142**, a message execution module **143**, a validation module **144**, a database module **163**, a token decoder **145**, a notification HTTP module **146**, an email interface module **147**, an account management unit **148**, checkout manager **149**, web checkout **164**, JAVA script library **161**, a security module **162**, authentication unit/token manager **165**, manager unit **166**, communications unit **167**, web browser **168**, libraries **169**, DKIM/SPF check **180**, a Universal Resource Locator (URL) translator **181**, and an NFC code generator interface **190**. While only one vendor system **120** is shown communicating with the e-commerce system **140**, this is shown as an example only. The e-commerce system **140** may communicate with an internal or external email service provider (ESP) **170** and an internal or external payment processing system **160**. The e-commerce system **140** may communicate with multiple vendor systems **120**.

Similarly, vendors may register with the e-commerce system **140**. The e-commerce system **140** may provide the vendor system **120** with a public key and private key to be used in token transaction in accordance with the methods described herein. When a transaction is attempted (e.g. for invoices and payments), the e-commerce system **140** decodes the token, authenticates the sender of the email, which may allow the transaction to be processed. While the e-commerce system **140** is depicted as a separate entity in FIG. **1**, this is shown as an example only. The e-commerce system **140** may be controlled and/or co-located with the vendor system **130**, and/or the email service provider **170**.

The token generator **141** may generate tokens for use in e-commerce transactions. Tokens may be encrypted or plain text strings which contain information to perform a transaction when sent to the e-commerce system **140**. A token may be one or multiple encrypted strings, files, passwords, cyphers, plain text or other data which may contain information used to perform or authenticate a transaction. While FIG. **1** shows the token generator **141** as being a part of the e-commerce system **140**, it may be hosted by any trusted party with access to the private key. For example, the banking server may include a token generator **141**. A token may include one or more of the following parameters or other parameters not listed below:

Private-key: The private key provided by the e-commerce system **140**.

Public-key: E-commerce system's **140** public key, provided by the e-commerce system **140**.

Auth-key: Any additional data that may be used to authenticate the transaction, including, but not limited to, biometric identification, location data and other fraud detection systems.

Partner-id: The partner ID given provided by the e-commerce system **140**.

Environment: The environment the vendor wants to generate buttons for. This distinguishes whether the token is being used in a testing environment or in the live environment (and running real transactions).

Type: The type of token to generate (e.g. bulk, email-targeted, etc.). There are multiple types of tokens that a token generator **141** may generate and decode. For example, site tokens may be used for website transactions, email tokens for minimum-of-clicks email payments, and universal tokens for email validations.

Card: The card token associated with the recipient of this token. When a customer is registered with the e-commerce system **140**, the vendor receives a credit card token—a unique identifier that references the specific card associated with that customer and vendor. When the vendor is generating a token to submit to e-commerce system **140**, they may include the card token as a customer identifier.

Email: The email associated with the receipt of this token.

URL: The Signup URL the recipient may go to if customer doesn't have payment information registered with e-commerce system **140**.

Amount: The amount a customer should be charged for the transaction the token is generated for.

User-data: Data to pass back as a reference. This data may include custom data that the vendor may want to pass through the e-commerce system **140** and receive back when a transaction has completed. It may include an item reference number or SKU, customer address, or other piece of data that is not required by e-commerce system **140** to complete a transaction, but that the vendor wants associated with that transaction.

Expires: Expiration date for token, integer value of seconds since epoch.

Header-user-agent: The HTTP_USER_AGENT from the request header. HTTP headers are sent as part of a request from a customer's web browser unit within customer device **150** for a piece of information. These headers define the parameters that the web browser unit is expecting to get back. The user-agent is the identifier of the software that is submitting the request—typically the identifier of the web browser unit that is requesting the content.

Header-accept-language: The HTTP_ACCEPT_LANGUAGE from the request header. The accept-language is the acceptable language for the response—e.g. the language in which the web browser unit is requesting the content be sent back.

Header-accept-charset: The HTTP_ACCEPT_CHARSET from the request header. The accept-charset is the character sets that are acceptable for the response—e.g. the character set in which the web browser unit is requesting the content be sent back.

IP-address: The IP address of the token recipient.

In one example, a bulk token may omit the card and email fields, thereby allowing for the tokens to be shared. Additionally, or alternatively, a bulk token may include the card field and/or email field but the e-commerce system **140** may be configured to ignore those fields and/or other fields based on the type field.

The purchase execution module **142** facilitates the execution of payments between a customer and a vendor.

The message execution module **143** is configured to analyze received messages and communicate with the token decoder **145** to determine if the received message is valid and to identify the request embedded in the message (e.g. request for purchase of goods.) If the token decoder **145**

indicates the token is valid, the message execution module **143** may then access the account management unit **148** to verify a transaction.

The database module **163** serves as a database to store information that may be accessed by the e-commerce system **140**.

The token decoder **145** may be configured to decode tokens received from external sources, such as a vendor system **120** or a customer device **150**.

The validation module **144** may serve to authenticate received emails, using the DomainKeys Identified Mail (DKIM) and/or Sender Policy Framework (SPF) protocols. For example, SPF allows a domain owner to add a file or record on the server that the recipient server cross-checks. Similarly, DKIM may be used to embed information within the email. While these specific validation/authentication protocols are discussed herein, any known validation/authentication protocol may be used and the use of the DKIM/SPF protocol is used only to enhance the understanding of the reader by using a specific possible validation/authentication protocol.

Generally, SPF is an email validation system designed to detect email spoofing by providing a mechanism to allow receiving mail exchangers to check that incoming mail from a domain is being sent from a host authorized by that domain's administrators. The list of authorized sending hosts for a domain may be published in the Domain Name System (DNS) records for that domain in the form of a specially formatted TXT record. Sender Policy Framework is described in IETF publication RFC 7208, which is incorporated by reference as if fully set forth.

The Simple Mail Transfer Protocol (SMTP) permits any computer to send an email claiming to be from any source address. SPF allows the owner of an Internet domain to specify which computers are authorized to send email with sender addresses in that domain, using Domain Name System (DNS) records. Receivers verifying the SPF information in TXT records may reject messages from unauthorized sources before receiving the body of the message.

The sender address is transmitted at the beginning of the SMTP dialog. If the server rejects the sender, the unauthorized client should receive a rejection message, and if that client was a relaying message transfer agent (MTA), a bounce message to the original sending address may be generated. If the server accepts the sender, and subsequently also accepts the recipients and the body of the message, it should insert a Return-Path field in the message header in order to save the sender address.

Generally, DKIM is an email validation system designed to detect email spoofing by providing a mechanism to allow receiving mail exchangers to check that incoming mail from a domain is authorized by that domain's administrators. A digital signature included with the message may be validated by the recipient using the signer's public key published in the DNS. DKIM is the result of merging DomainKeys and Identified Internet Mail. Prominent email service providers implementing DKIM include Yahoo, Gmail, AOL and FastMail. Any mail from these organizations should carry a DKIM signature.

More specifically, both, signing and verifying modules are usually part of a mail transfer agent (MTA). The signing organization may be a direct handler of the message, such as the author, the originating sending site or an intermediary along the transit path, or an indirect handler such as an independent service that provides assistance to a direct handler. In most cases, the signing module acts on behalf of the author organization or the originating service provider by inserting a DKIM-Signature: header field. The verifying module typically acts on behalf of the receiver organization.

DKIM is independent of Simple Mail Transfer Protocol (SMTP) routing aspects in that it operates on the RFC 5322 message—the transported mail's header and body—not the SMTP envelope defined in RFC 5321. Hence, the DKIM signature survives basic relaying across multiple MTAs. DKIM allows the signer to distinguish its legitimate mail stream. This ability to distinguish legitimate mail from potentially forged mail has benefits for recipients of e-mail as well as senders, and "DKIM awareness" is programmed into some e-mail software.

The "DKIM-Signature" header field, by way of example, may include a list of "tag=value" parts. Tags are short, usually only one or two letters. The most relevant ones are b for the actual digital signature of the contents (headers and body) of the mail message, bh for the body hash, d for the signing domain, and s for the selector. The default parameters for the authentication mechanism are to use SHA-256 as the cryptographic hash and RSA as the public key encryption scheme, and encode the encrypted hash using Base64. The receiving SMTP server uses the domain name and the selector to perform a DNS lookup. For example, given the signature:

DKIM-Signature: v=1; a=rsa-sha256; d=example.net; s=brisbane;
c=relaxed/simple; q=dns/txt; l=1234; t=1117574938; x=1118006938;
h=from:to:subject:date:keywords:keywords;
h=MTIzNDU2Nzg5MDEyMzQ1Njc4OTAxMj M0NTY3ODkwMTI=;
b=dzdVyOfAKC dLXdJOc9G2q8LoXSlEniSbav+ yuU4zGeeruD00lszZ VoG4ZHRNiYzR.

A verifier queries the TXT resource record type of brisbane._domainkey.example.net. The selector is a straightforward method to allow signers to add and remove keys whenever they wish—long lasting signatures for archival purposes are outside DKIM's scope. Some more tags are visible in the example:

v is the version,
a is the signing algorithm,
c is the canonicalization algorithm(s) for header and body,
q is the default query method,
l is the length of the canonicalized part of the body that has been signed,
t is the signature timestamp,
x is it's expire time, and
h is the list of signed header fields, repeated for fields that occur multiple times.

The DKIM-Signature header field itself is always implicitly included in h.

The data returned from the verifier query is also a list of tag-value pairs. It includes the domain's public key, along with other key usage tokens and flags. The receiver may use this to then decrypt the hash value in the header field and at the same time recalculate the hash value for the mail message (headers and body) that was received. If the two values match, this cryptographically proves that the mail was signed by the indicated domain and has not been tampered with in transit.

Signature verification failure does not force rejection of the message. Instead, the precise reasons why the authenticity of the message may not be proven should be made available to downstream and upstream processes. Methods for doing so may include sending back a message, or adding an Authentication-Results header field to the message as described in RFC 7001, which is incorporated as if fully set forth.

While DKIM and SPF protocols are discussed herein, validation module **144** may perform any authentication and validation type protocols. DKIM and SPF are used to provide examples of such validation protocols that may be performed in validation module **144**.

The notification HTTP module **146** delivers notices of events to external systems, such as an HTTP endpoint the vendor configures to update their internal database when a transaction is executed.

An email interface module **147** may be configured to parse emails for action by the e-commerce system **140**.

The account management unit **148** is configured to manage accounts registered with the e-commerce system **140**. A customer or vendor, wishing to complete a transaction with an e-commerce system **140** may register his/her email address and payment information with the e-commerce system **140**. The account management unit **148** may be configured to store a customer registry and a vendor registry.

The security module **162** may be configured to perform additional security measures to prevent unauthorized access to the system or fraud.

E-commerce system **140** may also include a pledge handler **183**, a calendar manager or calendar application **184**, a SMS handler **185**, an update unit **186**, and an alert unit **187**. SMS handler **185** is a device or element within the e-commerce system **140** that can handle SMS communication and can receive, decode/encode SMS communications. An update unit **186** provides updates within the e-commerce system **140**. Alert unit **187** is a unit that provides alerts within the e-commerce system **140**.

Pledge handler **183** is an element designed to handle pledges. This may include the portion of the system that receives identification of an intent to pay or perform and monitors and tracks such a pledge.

Calendar manager or calendar application **184** may be of the same type as calendar unit **150** of customer device **150**. Calendar **184** may be linked or in communication with calendar **158**. Calendar application **184** may be any of the types of calendar described above with respect to calendar **158**, the type of which may not be influenced by the type of calendar of calendar **158**.

The email service provider **170** may be associated with the vendor system **120**, the e-commerce system **140**, or may be a third party entity. The email service provider **170** may be configured to provide email marketing services. The email service provider **170** may further be configured to provide tracking information showing the status of email sent to each member of an address list. The email service provider **170** may further be configured to segment an address list into different interest groups or categories to send targeted information. The email service provider **170** may also parse messages based on the secondary system of email-targeted tokens. The email service provider **170** may also be configured to send trigger emails based on responses from the vendor system **120** or customer behavior. The email service provider **170** may further be configured to create or use templates generated by the e-commerce system **140**. The templates may be used for sending information to contacts. Email service provider **170** may include a customer interface that allows a customer to adjust the template or it may be integrated with external sources (e.g. vendor system **120** or e-commerce system **140**). The email service provider **170** may comprise a send engine (not shown), which allows vendors to distribute their message that may be received by one or more customer device(s) **150**. The email service provider **170** may further include a tool for generating mailto links, graphic buttons, and tokens. The email service provider **170** may be configured to dynamically customize the content of emails that are sent out, to tailor personalized information and mailto links.

The banking server (not shown) may be controlled by a third party system bank. The e-commerce system **140** may communicate with the banking server to verify that the customer has adequate funds or credit for the requested payment. For example, the banking server may be a controlled by VISA, AMERICAN EXPRESS, MASTERCARD or any other banking or financial network that a customer may use for online payment. The banking server may be an automatic clearing house services (ACS). The banking server may be an interface for a centralized or decentralized virtual currency system or protocol such as frequent flyer miles, "reward" points, or Bitcoin.

Credit card vault **195** may also be included in E-Commerce System **100**. Credit card vault **195** may include any credit clearing house. This is shown as being independent from any of the other entities in the system including customer device **150**, e-commerce system **140**, vendor system **120**, payment processing system **160**, and banking server (not shown) for example. Credit card vault **195** may be housed, received input or be a combination of the clearinghouse portion of any of the other entities in the system including customer device **150**, e-commerce system **140**, vendor system **120**, payment processing system **160**, and banking server (not shown) and is shown as a separate entity only for ease of understanding and clarity.

The email-based e-commerce system **140** may allow vendors to send advertising emails or bills with a mailto link associated with a specific product offer (or payment amount) and select the mailto link and generate a response email by selecting the mailto link. This response email contains a token and is addressed to the e-commerce system **140**. Once sent, this response email confirms the customer's payment for the product (or prepayment of a bill) by parsing the information in the token. The e-commerce system **140** processes the payment and notifies the vendor system **120** and the customer device **150**. The e-commerce system **140** may comprise a token generator **141** as well as components for processing the tokens and components for processing the payments and a system for notifying the vendor system **120** of the transaction details.

The functionality of the offer, mailto link, and response email is described in U.S. Pat. No. 9,152,980 which issued on Oct. 6, 2015 entitled EMAIL-BASED E-COMMERCE, which is a continuation of U.S. Pat. No. 8,775,623 which issued on Jul. 8, 2014 entitled SYSTEM AND METHOD FOR EMAIL-BASED E-COMMERCE, and U.S. Pat. No. 9,058,591 which issued on Jun. 16, 2015 entitled EMAIL-BASED DONATIONS, which applications are incorporated by reference as if fully set forth.

Referring back to the example system in FIG. **1**, the payment processing system **160** may be an independent third party operated unit, it may be located in the e-commerce system **140** or the vendor system **120**.

While the example system shown in FIG. **1** shows the e-commerce system **140** comprising the token generator **141**, this is shown as an example only. The vendor system **120** may also include a token generator **141** that allows vendors to directly create tokens. In another example, a third party may have a token generator **141** to create tokens for use by the vendor system **120**.

System **100** may not require the vendor system **120** to host the token generator **141** on their system. System **100** uses the

web browser's ability to transmit a message securely between two frames of a page and validating the URLs of those two pages.

Mailto links in the email messages may include one or any combination of the following fields: a "mailto:" and/or "to" field that indicate one or more email addresses of recipients of the new message; a "Copy To" or "CC" field that indicates one or more email addresses of recipients to whom a copy of the new message should be sent; a "Blind Copy To" or "BCC" field that indicates one or more email addresses of recipients to whom a "blind" copy of the new message should be sent; a field that indicates the subject of the new message; and a field that indicates the body of the new message. The mailto links may be defined according to the format described in Internet Engineering Task Force (IETF) RFC2368, which is incorporated by reference as if fully set forth herein. The mailto link may be accessed with a corresponding short URL.

The e-commerce system **140** may include a database of registered customers, such as for payment processing. The e-commerce system **140** may identify a customer by their email address and may decode tokens included in the content of an email and process payments based on the data in the token. A vendor that is associated with the e-commerce system **140** may send emails with the tokens generated for processing by the e-commerce system **140**. When generating tokens, a related URL checkout page with a matching offer is generated. This allows vendors via vendor system **120** to send emails with payment options, including payments for product offers, donations, services and gift cards, for example, with each offer associated with a token and a URL checkout page. The token is associated with a mailto link. A customer may activate the mailto link by selecting (or "clicking on") the link and send the message to the e-commerce system **140**. The e-commerce system **140** may then identify the email address and decode the token. If the e-commerce system **140** determines that the email address is not registered in the database, the e-commerce system **140** sends an email back to the customer with a URL link that is a checkout. This checkout is prepopulated based on the customer's mailto link selection based on the content of the token. The URL captures the payment information and registry information. The e-commerce system **140** updates the database once the new customer is registered. In future transactions, the email address of the customer is identified as registered by the e-commerce system **140** and the payment is processed exclusively through an email payment gateway.

An email-based e-commerce system **100**, as described herein, allows an email payment opportunity. This may include an email advertisement offering a product or service which is sent to customers and contains one or more mailto links. Each mailto link may relate to an item (e.g. service or product). If the mailto link is selected by a customer, an email message associated with an item or items is generated. Within that generated email message is a token that includes encoded information such as the purchase amount, the merchant, or an item identifier. The information contained in the token includes details for both the completion of email transaction and details that provide context and direction for the process of completing a transaction when the details included within the token are not sufficient. This may include details about the composition of a page to collect more information from the customer (where the required fields and information about those fields are stored directly in the token), a pointer to a location where the composition of a page to collect more information is stored (where the required fields and information about these fields are indirectly referenced by data in this token for retrieval at a later time), or a pointer or description of a routine to execute in case of failures (e.g. a response email in the case of product unavailability). This mailto link may be generated by a vendor through a web interface tool, or by using the e-commerce system **100** to programmatically create either the token or the full mailto link.

For a customer to complete an email transaction, the customer's payment information may be contained in the email e-commerce system database **163**. In order to determine if the customer's payment information is in database **163** the token may be decoded to recognize the customer when the email arrives at the e-commerce system **140**. The vendor sends the first email via the vendor system **120**. The customer via customer device **150** responds by activating a mailto link by sending the response to the e-commerce system **140**. If the customer is registered and the incoming email is authenticated, when the token is decoded, the transaction is processed.

If the customer is not registered, a web checkout page may be needed. Additional information may be encoded within the email token that describes a web checkout page for the email offer. The vendor's email may thereby serve multiple purposes. One enables the email to perform as an email payment, if the customer is registered, and another enables the unregistered customer to be sent a web checkout **164**. The web checkout **164** may be prepopulated with additional information based on the customers' original selection that is decoded from the token. The additional information included within the token identifies remote resources, which may include an input display and validation components. The remote resource may function as a plugin, as a reference to information stored in a database, or as a hook into the execution of an independent function.

When the web checkout **164** page is being loaded by the customer, the input display may provide the requirements for displaying the field on the form, including field name, entry box length, and other properties of the input field.

When the form has been filled out by the customer and is submitted, these form fields are sent to the validation resource to confirm that the information entered meets the formatting, length, data type, and any other requirements of the field. If validation resource returns a "pass" condition for the form, submission continues to the e-commerce system **140**. If the validation resource returns a "fail" condition for any data on the form, error messaging may be displayed to the customer, to enable correction of the one or more particular inputs that were identified as incorrect and resubmission again.

These remote resources may be created to describe standard information that may be used across numerous merchants, or they may be used to define custom information that may be used for a single merchant.

Using this system **100**, a vendor via vender system **120** may not be required to expend additional computer programming effort because it relies on the email e-commerce system **140**. If the offer web page is linked to the email purchase opportunity, the vendor may not be required to modify any existing systems or processes to register customers with the email e-commerce system **140**. The vendor may not need to segment their email lists into registered and unregistered customers and the customers are not aware of the distinction within the content of the email. The distinction between customers occurs by virtue of the system relieving both the vendor and the customer of any excess choices or distinctions. The vendor may create offers manu-

ally via a web interface, and the email e-commerce system **140** may handle the aspects of the transaction, from receiving the order request, facilitating the payment processing, storing relevant transaction data, sending a receipt, and displaying transaction data to the vendor.

The vendor may integrate directly with an API. The vendor may maintain existing payment flows separate from their email e-commerce solution, or the vendor may use the email e-commerce system as a full-featured payment system for both web and email transactions without doing any software development. Presenting the customer with a clear process that seamlessly migrates the customer to adopt an email-based checkout process eases the customer into a new technology where transactions happen by email instead of on a URL. This system **100** provides a vendor with a more automated or customized way of handling elements that may be achieved through the use of the email e-commerce system **140**.

FIG. **2** illustrates an example email message that solicits the purchase of goods from a vendor. FIG. **2** shows an email display window **10** that may be used by the email client module of customer device **150** to display a first example email message from the message processing module. The email display window **10** may include a reply button **12**, a control area **14**, and a message body area **16**. The control area **14** may display control and/or header information associated with the email message, such as the email addresses of the sender and recipient of the message. According to this example, the control area **14** shows that the sender of the message has the email address "sales@company.com." This is an email address that may be associated with an account used by the e-commerce system **140** for the communication of email messages. Further to this example, the control area **14** shows that the email address of the example recipient of the message (John Smith) is "john.smith@customer.com." The control area **14** may also display information such as a subject of the email message and the time the email message was sent. The reply button **12** may respond to user input to generate a new display element (not depicted) to respond to the email message.

The message body area **16** may display the body of the email message. As shown in FIG. **2**, the message body area **16** may display an example email message that shows information related to two example products (Wine One and Wine Two) that are being offered for sale by an example vendor (The Wine Shop). The message body area **16** includes a picture of a bottle of each type of wine, as well as the price for a bottle of each type of wine. The message body area **16** also includes, under the picture of the bottle of Wine One, a number of mailto links, such as the "1 Bottle," "2 Bottles," "3 Bottles", "6 Bottles," and "1 Case (10 percent Discount)" links. The message body area **16** also includes similar links under the picture of the bottle of Wine Two. These links may be defined according to the mailto URI scheme or other appropriate format, and each may describe a new email message that may be generated by the email client module of customer device **150** when that link is selected.

The "1 Bottle" link beneath the picture of the Wine One bottle may include information that, if selected, generates an email message that, if received by the e-commerce system **140**, will indicate to the e-commerce system **140** that John Smith may like to purchase one bottle of Wine One. As a further example, Wine One may have a product identifier of "0005," and John Smith may have a customer identifier of "0777." According to this example, the "1 Bottle" link may describe an email message that is addressed to an email account that is associated with the e-commerce system **140**, and that includes a message body that includes the identifier for John Smith ("0777"), an identifier of the selected product ("0005"), and an identifier of the quantity that John Smith may like to order (in this example, a single bottle). Alternatively or additionally, the email message described by the link may include information such as text that describes the order, an identifier of the vendor (in this example, The Wine Shop), an email campaign identifier, and/or other information. Similarly, the "2 Bottles" link beneath the picture of the Wine One bottle may include information that describes an email message that, if received by the e-commerce system **140**, will indicate to the e-commerce system **140** that John Smith may like to purchase two bottles of Wine One. According to this example, the "2 Bottles" link may be defined as follows:

2 Bottles mailto:sales@company.com?Subject="Press send to pay $42.99 to Wine Shop"? body="TEXT XXX-XXX-XXX-XXX"

In addition, the token identifier may be part of the To: address, or any other portion of an address field, or the address field itself. This token may be, for example, of the form: ex: mailto:payment-id-XXX-XXX-XXX@payments.atpay.com?Subject="Press send to pay $42.99 to Wine Shop"?body="TEXT". Once this token identifier reaches the e-commerce system **140**, the e-commerce system **140** may perform a look-up of the actual token in order to parse the offer details. This process is described in greater detail below.

Similarly, the "3 Bottles," "6 Bottles," and "1 Case (10 percent Discount)" links beneath the picture of the Wine One bottle indicate corresponding information for three bottles, six bottles, and one case of bottles, respectively. Additionally, the "1 Bottle," "2 Bottles," "3 Bottles," "6 Bottles," and "1 Case (10 percent Discount)" links under the Wine Two bottle indicate corresponding information for Wine Two as that described above with respect to the mailto links relating to Wine One.

The email client module of customer device **150** may receive a user input that indicates that one of the links displayed in the message body area **16** is selected. The user input may be, for example, a mouse click, keyboard input, or any other type of input that indicates that a link is selected. The email client module of customer device **150** may, in response to this user input, generate and display an order email message as specified by the selected link.

FIG. **3** illustrates an email message for placing an order. FIG. **3** shows an example message composition window **20** that may be displayed in response to a selection of a link from the message body area **16** of the email display window **10** of FIG. **2**. The message composition window **20** of FIG. **3** may include a Send button **22**, a To area **24**, a CC area **26**, a BCC area **28**, a Subject area **30**, and a message body area **32**. The Send button **22** in the message composition window **20** of FIG. **3** may be responsive to input from a user such as a mouse click, keyboard input, or any other type of input.

The different areas **24**, **26**, **28**, **30**, **32** in the message composition window **20** display different portions of an email message. For example, the To area **24** includes text that indicates email addresses to which the email message is addressed, while the message body area **32** displays the contents of the body of the email message. Each or any of these different areas **24**, **26**, **28**, **30**, **32** may be editable based on user input. Changes to the contents of these areas **24**, **26**, **28**, **30**, **32** may change the corresponding portion of the email message.

FIG. **3** shows an example wherein the "2 Bottles" link beneath the picture of the Wine One and described above with reference to FIG. **2** is selected. The To area **24** indicates that the message is addressed to sales@company.com. The Subject area **30** indicates that the subject of the message is "Purchase from Wine Shop." The CC area **26** and BCC area **28** are blank. Continuing the example of FIG. **3**, Wine One product has a product identifier of "0005" and John Smith has a customer identifier of "0777." Accordingly, the message body area **32** includes the text "ProductID0005" and "CustomerID0777." To indicate that the user has selected the purchase of two bottles, the message body area **32** includes the text "Qty0002." Further, the message body area **32** includes the text "CampaignID0033," indicating that the order is associated with an email campaign with an identifier of "0033."

In an instance where a different link from the message body area **16** of FIG. **2** is selected, the display areas **24**, **26**, **28**, **30**, **32** in the message composition window **20** may include contents specified by the selected different link. For example, in an instance where a link related to Wine Two is selected, the message body area may not include the text "ProductID0005," but may include text that indicates the corresponding identifier for Wine Two.

FIG. **4** illustrates an advertisement email message that solicits a donation. FIG. **4** shows an email display window **40** that may be used by the email client module of customer device **150** to display a second example email message from the message processing module. The email display window **40** includes a Reply button **42**, a control area **44**, and a message body area **46**. These display areas **42**, **44**, **46** may possess similar and/or analogous characteristics and/or perform similar functionality as corresponding display areas **12**, **14**, **16** in the message composition window **20** of FIG. **2**. According to the example of FIG. **4**, the control area **44** shows that the sender of the message has the email address "donate@company.com." This is an email address that may be associated with an account used by the e-commerce system **140** for the communication of email messages. Further to this example, the control area **44** shows that the email address of the example recipient of the message (John Smith) is "john.smith@customer.com."

As shown in FIG. **4**, the message body area **46** of the email display window **40** may display an example email message that shows information related the solicitation of donations for an example non-profit organization ("Charitable Organization"). The message body area **46** also includes mailto links, such as the "$5.00," "$10.00," "$25.00," "$50.00," and "$100.00" links. These links may possess similar and/or analogous characteristics, and/or include similar and/or analogous information, as the mailto links described above with reference to FIG. **2**. The "$5.00" link describes an email message that, if received by the e-commerce system **140**, will indicate to the e-commerce system **140** that John Smith may like to donate $5.00 to Charitable Organization. Similarly, the "$10.00," "$25.00," "$50.00, and $100.00" links describe email messages with corresponding information for $10.00, $25.00, $50.00, and $100.00 donations, respectively.

The email client module of customer device **150** may receive a user input that indicates that one of the links displayed in the message body area **46** is selected. The email client module of customer device **150** may, in response to this user input, generate and display an order email message as specified by the selected link.

FIG. **5** illustrates an email message for ordering a donation. FIG. **5** shows an example message composition window **50** that may be displayed in response to a selection of a link from the message body area **46** of the email display window **40** of FIG. **3**. The message composition window **50** of FIG. **5** may include a Send button **52**, a To area **54**, a CC area **56**, a BCC area **58**, a Subject area **60**, and a message body area **62**. These display elements **52**, **54**, **56**, **58**, **60**, **62** may possess similar and/or analogous characteristics and/or perform similar functionality as corresponding display areas **22**, **24**, **26**, **28**, **30**, **32** in the message composition window **20** of FIG. **3**.

FIG. **5** shows an example wherein the "$100.00" link from the message body area **46** of the email display window **40** of FIG. **4** is selected. The To area **54** indicates that the message is addressed to donate@company.com. The Subject area **60** indicates that the subject of the message is "Donation to Charitable Organization." The CC area **56** and BCC area **58** are blank. According to this example, a donation of $100.00 to Charitable Organization has a product identifier of "0099," and John Smith has a customer identifier of "0777." Accordingly, the message body area **62** includes the text "ProductID0099" and "CustomerID0777." Further, the message body area **62** includes the text "CampaignID0044," indicating that the order is associated with an email campaign with an identifier of "0044."

The email client module of customer device **150** may send the generated order email message to the e-commerce system **140**. This may be performed in response to input from a user of the customer device **150**. As one example, the email client module of customer device **150** may, in response to a selection of the Send button **52** in the message composition window **50** of FIG. **5**, transmit an order email message based on the contents of the fields **54**, **56**, **58**, **60**, **62** in the message composition window **50**. As another example, the email client module of customer device **150** may, in response to a selection of the Send button **52** in the message composition window **50** of FIG. **5**, transmit an order email message based on the contents of the display areas **54**, **56**, **58**, **60**, **62** in the message composition window **50**.

As initially presented above, a token may be located within the To: Cc: or Bcc fields of a response email. This token may take the form of a short token, for example. The e-commerce system **140** may generate the short token that is located in the To: field, or any other field, for example, as part of the email address. When the vendor system **130** requests that the token generator **141** generate a mailto link with the identifiers and token, the token generator **141** may generate a "short lookup token" and the "long token" encoded with the identifiers. The short lookup token may be associated with the long token and may be required or otherwise needed to access the information in the long token index. The short token index may be sent in an email to the customer device **150** as a mailto link. The customer using the customer device **150** selects the mailto link and generates the response email addressed to the e-commerce system **140**. The short lookup token may be built into the address of the response email. The short lookup token may be of the form:

payment-id-74E4DE00-51E2-457B-8C0B-648640EF232D@payments.atpay.com, for example.

When the customer using customer device **150** sends the email and the e-commerce system **140** receives the email and authenticates the customer's email address, the e-commerce system **140** may also determine using the short lookup token included in email address of the e-commerce system **140** the long token associated therewith. When the long token is determined, the e-commerce system **140** decodes the long token and processes the payment. The use of the short token allows for a less convoluted field in the email address and eliminates the need for the token to be located in the body field.

The short token lookup is not necessarily required in this system, as the transactions may be processed with the long token either in the address field, another field, or in the body of the response email. The use of the short lookup token may lessen the one-to-one correlation between the token and the actual offer and/or transaction details, as that correlation may be more direct in the long token embodiment.

It should be understood that many variations are possible based on the disclosure herein. Although features and elements are described above in particular combinations, each feature or element may be used alone without the other features and elements or in various combinations with or without other features and elements.

The methods or flow charts provided herein may be implemented in a computer program, software, or firmware incorporated in a non-transitory computer-readable storage medium for execution by a general purpose computer or a processor. Examples of non-transitory computer-readable storage mediums include a read only memory (ROM), a random access memory (RAM), a register, cache memory, semiconductor memory devices, magnetic media such as internal hard disks and removable disks, magneto-optical media, and optical media such as CD-ROM disks, and digital versatile disks (DVDs).

A system is described that uses the e-commerce system **140** to process emails for making payments. As shown in FIG. **1**, a single payment processing system is described. The present invention's flexibility and control offers vendors a choice of which payment processor to use. Additionally, a payment processor may be a vendor and offer payments by email. Payment processors and payment gateways may integrate the e-commerce system **140** and restrict access to other payment processors and gateways.

Disclosed is an alternative to SMS carrier payments. The integration of a system that accepts multiple email addresses associated with specific transactions and the integration of a calendar program is described herein. The method may include the e-commerce system **140** receiving a request, from a vendor, for a payment request SMS message to be sent to their customers. The e-commerce system **140** processes the customer responses via SMS and authenticates the messages. The e-commerce system **140** may request the payment to be processed with a vendor determined payment processor without the aid of the carrier.

FIG. **6**A is a transactional flow diagram **600** illustrating the process for an electronic message payment with a vendor **120** as determined payment processor **160**. The vendor **120** may be a retailer, non-profit, or a third party managing multiple payment platforms for multiple vendors. The vendor **120** requests a payment request message from the e-commerce system **140** at step **605**. The e-commerce system **140** may generate the payment request message at step **607** and share the message via SMS, email or Social Media, at step **610**, to the customer device **150** representing customers of the vendor **120**. A registered customer uses customer device **150** to view the offer and may be prompted to respond if they wish to make a payment. In an example, the customer may be asked to input the word "PAY" into customer device **150**. This response is sent by the customer device **150** to the e-commerce system **140** at step **615**. The e-commerce system **140** receives the message and authenticates the message at step **617** through various methods including but not limited to the customer's phone number and carrier info, token, or a secret pin. If the message authenticates indicating that the customer who sent the message is registered and associated with the vendor **120**, the e-commerce system **140** may generate a payment request and share this request with the credit card vault unit, or a type of debit automatic clearing house, at step **620**. The credit card vault unit authenticates the request and looks up the payment requirements associated with the customer at step **622** and shares a payment request with the payment processor **160** associated with that vendor **120** and customer device **150** at step **625**. The payment processor **160** authenticates the request and processes the payment at step **627**. The payment processor **160** may provide a notification of the transaction to the other parties including credit card vault at step **630** and e-commerce system **140** at step **635**. The e-commerce system **140** may generate a receipt at step **637**. The customer may receive the e mail receipt, a link, or attached document, which may be sent by other media, for their transaction at step **640**.

As an alternative or example of the above process, the message response message instead of being "PAY" may be a specific amount the customer wishes to pay, for example, "$19.95." Additionally, the credit card vault unit may be located anywhere within the system including being within one of the other systems such as payment processor **160** or e-commerce system **140**, for example, or be a series of shared vaults. The credit card vault may be an automatic clearing house.

Vendors **120** wishing to offer SMS payments to their customers are often charged large fees or are required to share a large percentage of a donation or payment. FIG. **6**B is a transactional flow diagram **645** illustrating the process for an SMS payment bypassing the carrier by using an email response with a vendor **120** determined payment processor **160**. Carriers generally charge customer's on their phone bill. In flow **645**, SMS is used to make an offer and email is used to authenticate the transaction to avoid the carrier charge. The vendor **120** may be a retailer, non-profit, or a third party managing multiple payment platforms for multiple vendors.

In flow **645**, the vendor **120** requests a payment request message at step **650** from the e-commerce system **140**. The e-commerce system **140** may generate a short token, long token and a short URL link associated with the transaction identified in the payment request message at step **652**. The e-commerce system **140** generates a long token for each of the offers and apply a corresponding short token and short URL to each long token. The e-commerce system **140** stores the tokens and the short URL version. The e-commerce system **140** generates an SMS offer or social media post offer message with the short URL link at step **652** and shares it with the customer device **150** at step **655**. There may be more than one offer and more than on link. The link maybe be embedded behind an image of a button. Alternatively, this link may be shared on a web browser, QR, barcode, application or document. The customer using customer device **150** via SMS or social media application **159** selects from multiple short URL links in the message, which selection

opens web browser **155** at step **657**. Web browser **155** requests the mailto link and token from the e-commerce system **140** at step **660**. The e-commerce **140** system translates the URL link at step **662** and shares the corresponding mailto link and short token with browser **155** at step **665**, triggering email client **156** to open. Email client **156** generates the response email with the token at step **672**. The opening of the browser may not be visible to the customer. The response email may be directed to the e-commerce system **140** with the short token. The token may be located anywhere in any field of the email. The token may be the email address. The customer device **150** sends the response email to share it with the e-commerce system **140** at step **675**. The e-commerce system **140** authenticates the email message. The token is also decoded. If either the authentication or the token decoding does not meet requirements, the customer device **150** may receive a response message requesting an additional confirmation or a URL link that navigates the customer to a signup page and/or checkout.

If the customer is registered and associated with the vendor **120**, the e-commerce system **140** may generate a payment request and share this request with the credit card vault unit at step **680**. The credit card vault unit authenticates the request and looks up the payment requirements associated with the customer at step **682**. A payment request may be shared with the payment processor **160** associated with that vendor **120** and customer at step **685**. The payment processor **160** authenticates the request and processes the payment at step **687**. The payment processor **160** may provide a notification of the transaction to the other parties in the form of a confirmation, for example, at steps **690** and **695**. A receipt may be generated by the e-commerce system **140** at step **697**. The customer may receive the generated email receipt, a link, or attached document, which may be sent by other media, for their transaction at step **698**.

FIG. **7** illustrates a flow diagram **700** depicting a signup process that collects the information to assist in avoiding carrier billing charges. The ecommerce system **140** generates a web page allowing vendors to sign up customers and to register the customer with the e-commerce system **140**. This sign-up page may also function to complete a transaction in a web environment. The URL of this signup page is used in various media such as SMS, email and social media. The URL link also be used in other forms such as applications, QR, barcode or documents. The e-commerce system **140** may utilize an array of media to drive a customer to a single URL sign up by generating a URL link to the signup at step **705**. The URL link may be provided to a customer via an SMS campaign at step **710**, via a social media campaign at step **720**, and/or via an email campaign at step **730**. The customer may select the URL delivered by SMS at step **715**, by social media at step **725** and by email at step **735**. Once the URL is selected the customer may be directed to and visit a signup page at step **740**. The signup process collects required information used across multiple payment methods including collecting various addresses, phone numbers and social media handles at step **745** to allow the e-commerce system **140** to authenticate in different media for increased security. This allows the e-commerce system **140** to register the customer under contacts at step **750**.

FIG. **8**A is an illustration of a method **800** depicting a vendor **120** requesting an email address associated with a command. When email messages arrive at the generated command address and the sender address is authenticated and recognized as registered with the e-commerce system **140**, the action set by the vendor **120** is triggered. Examples of such an action is placing a charge on the customer's credit card, paying a minimum balance, or canceling a payment.

Method **800** begins with the vendor **120** using the vendor device to access the e-commerce system **140** at step **805**. This may be done via a secure web interface or a direct integration with an API, for example. The vendor **120** formats the action required at step **810**, such as the amount to be charged to the customer's credit card, for example. The e-commerce system **140** generates a command email address and assigns that action request to that email address at step **815**. The e-commerce system **140** manages the command email address, and when the messages arrive at that address, the e-commerce system **140** authenticates the sender address at step **820**. The e-commerce system **140** parses the email address based on successful authentication and where authentication failed. Assigned action based on command email is implemented for authenticated sender address at step **825**. Assigned action is denied for failed authenticated sender addresses at step **830**. Customers who fail authentication or are not registered with the e-commerce system **140** may be sent a Sign Up URL. The Sign up URL is an interface where information is submitted to the e-commerce system **140** and stored for future transactions.

FIG. **8**B is an illustration of a transactional flow diagram **890** illustrating a processes where a customer using customer device **150** sends a command email addressed to a destination associated with a specific assigned action. This action for example may be processing a payment. A customer using customer device **150** may send an email to an advertised address of e-commerce system **140**, for example, Paymybill@comcast.com, at step **840**. Although in this example the destination address is an email address it may be a destination of an SMS or social media post. The customer device **150** may share a message from the customer's email account to the command email address controlled by the e-commerce system **140** at step **840**. This message may be a request to be billed. The e-commerce system **140** receives and authenticates the address and recognizes the address as being associated with a registered customer at step **845**. The e-commerce system **140** performs a presale hook and requests information details from the vendor **120** based on the customer's message address at step **850**. The vendor **120** looks up the customer information at step **855** and shares the billing information with the e-commerce system **140** at step **860**. The e-commerce system **140** may provide an invoice composed with details and assigned to the specific address at step **865**.

The e-commerce system **140** sends a message with a mailto link at step **870**. There may be a variety of mailto links included, each representing different responses such as 'Pay Full Amount', 'Pay Minimum Amount', 'Pay $10', or the like. Each of these commands may be associated with a different address included in the email as mailto hyperlinks, links, and telephone numbers of social media handles.

Alternatively, a mailto link may not be required in the body field of the email. The command email address may be the address of the 'reply to' setting in the email offer from the e-commerce system **140**. In this example, there is a single mailto link representing one command to complete the payment.

The customer uses the customer device **150** to view the message and selects the mailto link and generates the response message at step **875**. The generated message is sent to the e-commerce system **140** from the customer device **150** at step **880**. The address may be different than the original address and may define the intent of the customer. For example, Paymentconfirmation@comcast.com appears to be

addressed to the vendor **120** or match the original address, but is processed by the e-commerce system **140**.

The e-commerce system **140** receives the message, authenticates and recognizes the address, and processes the payments at step **885**. Alternatively, a token may be included in the payment request email and the response email.

FIG. **9** is an illustration **900** outlining different methods for the e-commerce system **140** responding to a payment request from a customer device **150** based on the customer's registration status with the e-commerce system **140** and vendor **120**. The diagram illustrates three examples with two customers C**1** and C**2** and three vendors V**1**, V**2** and V**3**. Although this example displays a limited number of customer and vendors, the system may serve any number of vendors **120** and customer device **150**. Each of the three vendors is assigned three email addresses V**1**, V**2** and V**3** associated with three different actions relating to the vendor.

C**1**-V**1** is an example where the customer's email address is not recognized as registered at **905** by the e-commerce system **140** and is navigated to a sign up **910** where customer device **150** C**1** may select the URL **920** to generate an account **940** update **925** the vendor **120** V**1** and checkout by processing the payment **930**.

C**2**-V**2** is an example where the customer's email is recognized as registered **906** and authenticated by the e-commerce system **140**, but the email is not recognized by the vendor **120** V**2** as details are missing **935** and further action is required. The customer device **150** C**2** is routed to a sign up **911** where customer device **150** C**2** may select the URL **921** to generate an account **941** update **926** the vendor **120** V**2** and checkout by processing the payment **931**. For bill payment this may only require an invoice number.

C**2**-V**3** is an example where a customer's email is recognized as registered **907** and authenticated by the e-commerce system **140** and the vendor **120** V**3** recognizes the address after looking it up **936**. The information is shared **950**, a message is generated by e-commerce system **140** at **955** and the customer device **150** causes a response message **960** that is authenticated **965** by the e-commerce system **140**, updated **927** by the vendor system **120** V**3**, and the payment is processed **932** by payment processing system **160**. This process (C**2**-V**3**) is described in more detail in FIG. **11**.

The two C**2** examples (C**2**-V**2** and C**2**-V**3**) illustrate how one customer may have varied requirements based on vendor registration status (difference between vendor **120** V**2** and vendor **120** V**3**). The two C**2** examples illustrate that a customer may initiate payments with more than one vendor **120** but will have to register with the vendor **120** to fill-in any missing information. The e-commerce system **140** sign up may capture information and may share or restrict information based on vendor **120** requirements.

FIG. **10**A is a transactional flow diagram **1000** that illustrates a process where a calendar application, or calendar unit **158**, is integrated with the e-commerce system **140** enabling payment messages to be generated from reminders or alerts as part of the function of the calendar application **158**. Registered customers may download a calendar application **158** or plugin for an existing calendar application **158** and schedule payment options by scheduling a reminder or alert. A reminder may be a notation in the **158** application, a pop up window, the generation of the message directly, or another type of alert. The reminder may include a link that when selected generates a response message to the e-commerce system confirming payment.

Referring now also to FIG. **10**B, there is an illustration of an example **1050** of a calendar application **158**. Payment offers are scheduled to appear on the interface with a link or links **1055** which may be selected. These links may be embedded behind an image of a button. The selection of the pay button **1060** may generate a payment message. This message may be an email, SMS, or social media post. The message may hold a bulk token to pay a predetermined amount or simply signify the amount due. The example calendar application **1050** may communicate with the vendor **120** or e-commerce system **140** and provide details on the transaction, which may be included in the response email, using a token generated specifically for that transaction. The command may also be the address method described above in FIG. **8**B. In place of a response message, the link may open an Email Based Web Checkout or a conventional web checkout URL.

Referring back to FIG. **10**A, the vendor system **120** updates the calendar application **158** with the details of the charges to be paid by the customer to the vendor **120**. The customer receives a message invite to place the reminder in their calendar application **158** or the reminder may be set automatically by the vendor **120** or e-commerce system **140** at step **1005**. The invite is accepted via the communication unit **153** at step **1007** and added to the calendar application **158** on the customer device **150** at step **101**. The payment details are shared and updated by the vendor **120**, the customer via customer device **150**, and the e-commerce system **140** at steps **1015** and **1020**. The customer uses the customer device **150** to view the reminder on the calendar application **158** at step **1022**, selects the link at step **1025**, and the communication unit **153** generates a response message with a token at step **1027**. The response message with the token is sent to the e-commerce system **140** at step **1030**. The e-commerce system **140** receives the message, authenticates the email, and decodes the token at step **1032**. The e-commerce system **140** sends a notification of the authentication to the vendor **120** at step **1035** and the vendor **120** processes the payment and updates the customer's account at step **1037**. The e-commerce system **140** and calendar application **158** are updated at steps **1040** and **1045**. Although in this example email is used, other forms of messaging may be substituted for email, such as SMS, social media, by way of non-limiting example only. The above transactions may be Simple Mail Transfer Protocol (SMTP) or Hyper-Text Transfer Protocol (HTTP) or some combination of the two. It may also utilize a web-based email checkout described in FIG. **13**.

The present system and method may provide interactivity between a customer via customer device **150** and a vendor **120** via the e-commerce system **140**. The e-commerce system **140** ties together multiple libraries to generate messages that use a customer device **150** to provide queries to customers allowing customers to select a response based on a category of choice. These multiple libraries may work in tandem sending multiple follow up questions until the desired choice is ascertained by the e-commerce system **140**. The call and response method of communication lends itself to SMS, email and Social media messaging as described herein below.

FIG. **11** illustrates a diagram **1100** depicting the process for an interactive messaging system facilitating payment. FIG. **11** illustrates one general process by which e-commerce system **140**, vendor system **120** and a customer device **150** initiate a transaction by defining the requirements to complete the transaction **1101**. For example, the initiating a transaction may include generating and sending a prompt message **1120** to a registered customer via customer device **150**, looking up a balance due based on an authenticated address and or authenticating an email response message.

Depending of the circumstance that may be defined by the customer via customer device **150** or vendor **120**, e-commerce system **140** may be configured based on those requirements. Prompts **1120** requesting responses are sent to the customer via customer device **150**. For example, a first prompt may inquire if the customer wants to buy tickets. A second prompt may inquire how many tickets the customer is requesting. A third prompt may inquire what date the customer wishes to attend. Prompts **1120** may be SMS, email, social media via customer device **150** and may be verbal or based on signage or broadcasting viewed by the customer via an alternate means. Determining each prompt **1120** may require the e-commerce system **140** to pull information from a series of libraries **1190**. There may be any number of libraries **1190** including library unit **169** in e-commerce system **140**, library unit **125** from vendor system **120**, payment processing information from payment processor **160**, as well as third party accounting information, GPC, ESP **170**, CRM information, customer device **150** applications and shopping carts, for example. Once the offer details are determined **1130** via the methods described above, then the offer message **1140** is sent. Offer message **1140** may require more security or may switch media as a confirmation of identity and authentication. The customer response is authenticated **1150** and the payment is processed via payment processor **160**.

FIG. **12** is a transactional flow diagram **1200** illustrating an interactive call and response method implemented in e-commerce system **100**. Vendor **120** may be a retailer, non-profit, or a third party managing multiple payment platforms for multiple vendors. Customer via customer device **150** and vendor system **120** may access their accounts of e-commerce system **140** though the communication unit **167** at step **1205**. Using the update unit **186**, the customer via customer device **150** and vendor system **120** register information allowing access to their accounts at step **1210**, offers to be made, and updates at step **1215** to the library unit **169** with this information. Based on the information from the library unit **169** shared to alert unit **187** at step **1220**, alert unit **187** determines at step **1225** that a prompt message needs to be sent. Using the communication unit **167**, the prompt message is generated at step **1230** and shared at step **1232** with the customer device **150**. The prompt message may have one or more suggested responses. The prompt message may also be specific to the customer, for example, relating to a specific amount of money. The customer via customer device **150** may select from multiple options and generates a response option message at step **1235** which is shared at step **1237** with the communication unit **167**. The communication unit **167** may authenticate the message and decode a token; various forms of authentication may be used. The option is shared with the update unit **186** and the library unit **169** at steps **1240** and **1245** respectively. If the requirements of the offer are incomplete, the system **140** may then determine that another prompt is sent and repeat the process until all requirements are met. Once the library unit **169** is updated at step **1245** and the alert unit **187** determines that requirements are complete at step **1255**, an offer is generated at step **1257** and the communication unit **167** shares an offer message with the customer device **150** at step **1260**. The customer via customer device **150** makes a selection at step **1265** and sends a response message at step **1267** to the communication unit **167**. The communication unit **167** may authenticate the message or decode a token at step **1270**. Various forms of authentication may be used, for example, a token may not be used at all and instead an address or phone number related to the customer may be used for authentication. As a security measure the offer message may be in one media and the response message in a separate media from the offer message. For example the offer message may be an SMS that requires a response in an email. If the response message is authenticated at step **1270**, the communication unit **167** shares the offer message at step **1272** with the update unit **186**. The update unit **186** shares the updated information at step **1275** with the library unit **169** determining if the requirements are met. The determination is shared with the alert unit **187** at step **1280**. If requirements are not met, the customer via customer device **150** may receive a response including an additional confirmation message or a message with a Uniform Resource Locator (URL) link that navigates the customer to a signup page and/or checkout. If all requirements are met, the alert unit **187** requests the transaction be made by making a payment request at step **1285** which the communication unit **167** shares with the payment processor **160** at step **1290**. The payment processor **160** charges the credit card or bank account and processes the payment at step **1295**.

FIG. **13** is a transactional flow diagram **1300** illustrating the use of a short URL with token authentication in e-commerce system **100**. In the depicted embodiment, a web browser **155** is utilized by the customer to request a link at step **1310** that triggers a message to confirm payment. Various prompts might trigger the web browser **155** to request the link from the e-commerce system **140**. For example the customer may select a URL link in another application that opens the web browser **155** or alternatively the customer may be in a web-based checkout where the customer selects the link that then opens the web browser **155**. Opening the web browser **155** triggers a request from communication unit **167** for a mailto link and token at step **1310**. The request may be a series of requests or require the e-commerce system **140** to tally an amount due of the customer. E-commerce system **140** may also require a look up of other required information. The communication unit **167** shares the request with the URL translator **182** at step **1320**. The URL translator **182** translates the URL link at step **1325** and shares the corresponding link and token with the communication unit **167** at step **1330**. This token may be a short token that corresponds to a longer token. The communication unit **167** shares the link and token with the browser **155** at step **1340**, triggering the messaging unit **159** at step **1350** to generate the response message with the token at step **1355**. The opening of the browser **155** may not be visible to the customer on customer device **150**. The response message is addressed and sent to the e-commerce system **140** communication unit **167** with the token at step **1360**. The token may be located anywhere in any field of the message. The communication unit **167** authenticates the message at step **1370** and shares the token with the token manager **165** to decode the token at step **1375**. If the token is a short token, it may need to be matched with a corresponding long token. The long token may require additional decoding (not shown). If either the authentication or the token decoding does not meet requirements, the customer via customer device **150** may receive a response message requesting an additional confirmation or a URL link that navigates the customer device **150** to a signup page and/or checkout. If all requirements are met, the token manager **165** notifies the communication unit **167** that requirements are met at step **1380**. The communication unit **167** requests payment at step **1390** with the payment processor **160**. The payment is processed at step **1395**, and updates and notifications are sent.

FIG. **14** is a diagram **1400** illustrating a tiered response for an interaction in the present system **100**. A first portion **1410** identifies all of the possible versions of the outcome based on the message prompts formed from the customer/vendor criteria. Underneath first portion **1410** are levels or tiers of the available outcomes from the prompts. In tier **1420**, the three choices for selection of prompt **1** are shown. As shown in the example, three choices are available—A, B, C.

In tier **1430**, there are three choices for prompt **2**. These choices are shown combined with the choices from tier **1 1420**. As shown in the example, three choices are available—**1**, **2**, **3**. When combined with the three choices from tier **1 1420**, the example provides nine choices or pairings. Three choices grouped based on choice A in tier **1 1420**—A**1**, A**2**, A**3**. Three choices grouped based on choice B in tier **1 1420**—B**1**, B**2**, B**3**. Three choices grouped based on choice C in tier **1 1420**—C**1**, C**2**, C**3**.

In tier **1440**, there are three choices for prompt **3**. These choices are shown combined with the choices for tiers **1** (**1420**) and **2** (**1430**). As shown in the depicted example, three choices are available—a, b, c. When combined with the three choices from tier **1 1420** and the three choices from tier **2 1430**, the example provides **27** choices or pairings. These choices may be groped based on the groupings from tier **2 1430**—A**1**, A**2**, A**3**, B**1**, B**2**, B**3**, C**1**, C**2**, C**3**. This provides three outcomes **1440**A**1**—A**1***a*, A**1***b*, A**1***c*, three outcomes **1440**A**2**—A**2***a*, A**2***b*, A**2***c*, three outcomes **1440**A**3**—A**3***a*, A**3***b*, A**3***c*, three outcomes **1440**B**1**—B**1***a*, B**1***b*, B**1***c*, three outcomes **1440**B**2**—B**2***a*, B**2***b*, B**2***c*, three outcomes **1440**B**3**—B**3***a*, B**3***b*, B**3***c*, three outcomes **1440**C**1**—C**1***a*, C**1***b*, C**1***c*, three outcomes **1440**C**2**—C**2***a*, C**2***b*, C**2***c*, and three outcomes **1440**C**3**—C**3***a*, C**3***b*, C**3***c*. This represents all of the available combinations of the choices for prompts **1**, **2**, **3**. While the example includes three choices for each prompt and three prompts, these amounts are provided only for the ease of understanding while any number of prompts and choices within the prompts may be used. This variation includes using different numbers of choices for different ones of the prompts, for example. Different numbers of prompts may also be applied.

In this example, the selected option **1450**, such as via customer device **150**, is option B**3***c*. A payment may be processed based on the selection of option **1450**.

As shown in FIG. **14**, each tier, **1420**, **1430**, **1440** provides a set of prompts (selections) that aid in determining the customer's desired selection. As an example, if tickets are being sold, prompt **1 1420**—A, B, or C—may represent three different events for which tickets may be purchased. Prompt **2 1430**—**1**, **2** or **3**—may represent a quantity of tickets that are desired to be purchased, and prompt **3 1440**—a, b, or c—may represent distinct times for the event. In this example, first portion **1410** may include all possible combination of different events, quantity of tickets, and times for the event. Although ticket sales serves as an example any range of product, service or donation may be substituted.

The present system and method may utilize the interactive features of the e-commerce system **140** to access customer's online shopping cart lists. The e-commerce system **140** may be linked to a variety of vendor shopping cart libraries and aggregate those selections to offer responses to questions that aid customers in narrowing their choices in order to make purchases. Customers, using customer device **150**, through a variety of messaging such as SMS, social media and email, are eventually offered a chance to checkout. Offer messages are composed based on the settings determined by the vendor **120**, the customer, or the e-commerce system **140**. For example, if a customer abandons a shopping cart with items not purchased, the e-commerce system **140** may send offers based on the contents of the abandoned cart. Alternatively, the e-commerce system **140** may use a predictive method based on what customers have purchased, estimating when a supply runs low based on average consumption or past frequency of purchased or related items to recommend actions to the customer. Although an online shopping cart is used as an example in the descriptions of FIGS. **15-19**, shopping carts may be replaced with any type of library of customer information, such as wedding registries, wish lists, or customer activity information.

FIG. **15** is a transactional flow diagram **1500** illustrating a method where the e-commerce system **140** accesses a vendor library **125** of customer shopping cart activity to message a series of choices to offer an email based checkout. The vendor via vendor system **120** registers with the e-commerce system **140** and shares customer information with the e-commerce system **140** at step **1505**. The vendor system library **125** periodically updates the e-commerce system **140**, sharing customer information with the communication unit **167** at step **1505**. The communication unit **167** determines the required prompts to be sent and requests a token based on the prompts to be proposed to customers at step **1510**. The communication unit **167** shares the request for tokens with the token manager **165** and the token manager generates the tokens at step **1512** and shares them with the communication unit **167** at step **1515**. The token may be included within a mailto link. The communication unit **167** generates the prompt email with the mailto link and token at step **1517** and shares the message with the customer device **150** at step **1520**. The customer views the message using the email client **156** and selects a mailto link, generating a response request message at step **1522**. The message is sent and shared with the e-commerce system **140** using the communication unit **167** at step **1525**. The communication unit **167** authenticates the email at step **1530** and shares the token with the token manager **165**. The token is decoded by the token manager **165** at step **1532** and communication unit **167** is updated at step **1535** to determine if further information is required at step **1540**. A token may not be necessary to complete the transaction, alternatively only an email address may be required, for example, a specific address reserved only for that response, as described in FIGS. **8**A, **8**B and **9** hereinabove. The communication unit **167** may request additional information from the vendor library unit **125** at step **1545**. The required information retrieved from the vendor library unit **125** at step **1547** and the information is shared with the communication unit **167** at step **1550**. Although the vendor library unit **125** is located in the vendor system **120** this library may be located elsewhere with system **100**. Although in this example only one prompt is sent at step **1520**, the selection process may require a series of updates with the vendor **120**, prompts with the customer via customer device **150**, or no prompts.

The information shared with the communication unit **167** forms the basis of the offers. The communication unit **167** shares the request with the token manager **165** at step **1555**. The required token(s) are generated by the token manager **165** at step **1557** and shared with the communication unit **167** at step **1560**. The communication unit **167** generates the offer email with mailto links and tokens at step **1565**, and shares the message with the customer device **150** at step **1570**. The customer via customer device **150** views the email offers on the email client **156** and selects one of the mailto links to make a purchase at step **1572**. This mailto link may be embedded behind an image. The mailto link

generates a response email that has the token and is addressed to the e-commerce system. The customer device **150** sends the email at step **1575** and shares the message with the communication unit **167**. The message is authenticated at step **1580** by the communication unit **167** and the token is shared with the token manager **165**. The token manager **165** decodes the token at step **1582**. If either the authentication or the token decoding does not meet requirements, the customer may receive a response message via customer device **150** requesting an additional confirmation or a URL link that navigates the customer to a signup page and/or checkout. If all requirements are met at step **1585**, the token manager **165** updates the communications unit **167** and the communications unit shares a payment request with the payment processor **160** at step **1590**. The payment is then processed at step **1592** and notifications and updates are shared at step **1595**.

FIG. **16** is a transactional flow diagram **1600** illustrating a method where the e-commerce system **140** accesses a vendor library **125** of customer shopping cart activity to message a series of choices to the customer and based on customer responses offer a SMS or social media based checkout. The vendor via vendor system **120** registers with the e-commerce system **140** and shares customer information with the e-commerce system **140** at step **1605**. The vendor system library **125** periodically updates the e-commerce system **140**, sharing customer information with the communication unit **167** at step **1605**. The communication unit **167** determines the required prompts to be sent and requests a token based on the prompts to be proposed to customers at step **1610**. The communication unit **167** shares the request for tokens with the token manager **165** and the token manager generates the tokens at step **1612** and shares them with the communication unit **167** at step **1615**. The communication unit **167** generates the prompt SMS or social media post at step **1617** and shares the message with the customer device **150** at step **1620**. The customer views the message using the SMS or social media application **159** and makes a selection, generating a response request message at step **1622**. The message is sent and shared with the e-commerce system **140** using the communication unit **167** at step **1625**. The communication unit **167** authenticates the email at step **1630** and shares the token with the token manager **165**. The token is decoded by the token manager **165** at step **1632** and communication unit **167** is updated at step **1635** to determine if further information is required at step **1640**. A token may not be necessary only an email address. The communication unit **167** may request additional information from the vendor library unit **125** at step **1645**. The required information retrieved from the vendor library unit **125** at step **1647** and the information is shared with the communication unit **167** at step **1650**. Although the vendor library unit **125** is located in the vendor system **120** this library may be located elsewhere with system **100**. Although in this example only one prompt is sent at step **1620**, the selection process may require a series of updates with the vendor **120**, prompts with the customer via customer device **150**, or no prompts.

The information shared with the communication unit **167** forms the basis of the offers. The communication unit **167** shares the request with the token manager **165** at step **1655**. The required token(s) are generated by the token manager **165** at step **1657** and shared with the communication unit **167** at step **1660**. The communication unit **167** generates the offer using SMS or social media post with tokens at step **1665**, and shares them with the customer device **150** at step **1670**. The customer via customer device **150** views the SMS or social media offer using SMS or social media application **159**, makes a selection, and generates a response message addressed to the e-commerce system including the token at step **1672**. The customer device **150** sends the SMS or social media post at step **1675** and shares the response message with the communication unit **167**. The response message is authenticated at step **1680** by the communication unit **167** and the token is shared with the token manager **165**. The token manager **165** decodes the token at step **1682**. If either the authentication or the token decoding does not meet requirements, the customer may receive a response message via customer device **150** requesting an additional confirmation or a URL link that navigates the customer to a signup page and/or checkout. If all requirements are met at step **1685**, the token manager **165** updates the communications unit **167** and the communications unit shares a payment request with the payment processor **160** at step **1690**. The payment is then processed at step **1692** and notifications and updates are shared at step **1695**.

FIG. **17** is a transactional flow diagram **1700** illustrating a method where the e-commerce system **140** may access a vendor library **125** of customer shopping cart activity to message a series of choices to the customer device **150** via SMS and social media and based on customer responses offer a an email-based checkout. The vendor **120** registers with the e-commerce system and shares customer information with the e-commerce system **140** at step **1705**. The vendor system library **125** periodically updates the e-commerce system, sharing customer information with the communication unit **167** at step **1705**. The communication unit **167** determines the required prompts. The communication unit **167** generates the SMS or social media prompt and shares the message with the customer device **150** at step **1710**. The customer views the message using the SMS or Social Media application **159** on customer device **150**, makes a selection, and generates a response request message at step **1715**. The response may take many forms such as a word, a quantity, a secret pin, a token, by way of non-limiting examples only. The response request message is addressed to the e-commerce system **140** and is sent and shared with the communication unit **167** at step **1720**. The communication unit **167** authenticates the SMS or social media posting at step **1725**, shares the SMS or social media posting, and determines if further information is required at step **1730**. The communication unit **167** requests additional information at step **1730** from the vendor library unit **125** at step **1735**. The required information queried by the vendor library unit **125** at step **1740** and the information is shared with the communication unit **167** at step **1745**. Although the vendor library unit **125** is located in the vendor system **120** this library may be located elsewhere. Although in this example only a single prompt is sent, the selection process may require a series of updates with the vendor **120**, prompts with the customer device **150**, or no prompts.

The information shared with the communication unit forms the basis of the offers at step **1750**. The communication unit **167** shares the request with the token manager **165** at step **1755**. The tokens are generated by the token manager **165** at step **1760** and shared with the communication unit **167** at step **1765**. The communication unit **167** generates the offer email with mailto links and tokens and shares them with the customer device **150** at step **1770**. The customer views the email offers on the email client **156** and selects one of the mailto links to make a purchase at step **1775**. This mailto link may be embedded behind an image. The mailto link generates a response email that has the token and is addressed to the e-commerce system **140**. The email is sent

at step **178**-to the communication unit **167**. The message is authenticated by the communication unit **167** at step **1785** and the token is shared with token manager **165**. The token manager **165** decodes the token at step **1787**. If either the authentication or the token decoding does not meet requirements, the customer via customer device **150** may receive a response message requesting an additional confirmation or a URL link that navigates the customer to a signup page and/or checkout. If all requirements are met the token manager **165** updates the communications unit **167** at step **1790** and the communications unit **167** shares a payment request with the payment processor **160** at step **1792**. The payment is then processed at step **1795** and notifications and updates are shared at step **1797**.

FIGS. **18**A and **18**B collectively illustrate a transactional flow diagram **1800** illustrating a method where the e-commerce system **140** accesses the library of customer shopping cart activity to message a series of prompts to the customer device **150** and based on customer responses via the customer device **150**, the e-commerce system **140** completes the transaction via email. In flow **1800**, the vendor **120** registers with the e-commerce system **140** and shares customer shopping cart information with the e-commerce system **140** at step **1805**. The library unit **125** of vendor system **120** may periodically update the e-commerce system **140**, sharing customer information with the communication unit **167**. The communication unit **167** determines the required prompts. The communication unit **167** generates the prompt SMS or social media posting and shares the prompt with the customer device **150** at step **1810**. The customer views the message using the customer device **150** via the SMS or social media application **159** and makes a selection to generate a response request message at step **1812**. The response message may take many forms such as a word, a quantity, a secret pin or token. The response message is addressed to the e-commerce system **140**. The response message is sent to the communication unit **167** at step **1815**. The communication unit **167** authenticates the SMS or social media posting and determines if additional information is required at step **1827**. If needed, the communication unit **167** requests additional information from the vendor library unit **125** at step **1820**. The required information is looked up at the vendor library unit **125** at step **1822** and the information is shared with the communication unit **167** at step **1825**. The communication unit **167** requests required tokens from the token manager **165** at step **1830**.

The token manager **165** and URL translator **182** generate a short token and a corresponding long token at step **1832**. The token manager **165** and URL translator **182** generate a short URL that corresponds to the short token and the long token and share them with the URL translator at step **1835**. The URL translator **182** stores the tokens and the shortened URL at step **1837**. The communication unit **167** generates an SMS offer or social media post offer message with the short URL Link at step **1838** and shares it with the customer device **150** at step **1840**. There may be more than one offer and more than one link. The customer using customer device **150** via SMS or social media application **159** selects the short URL link in the message at step **1842** to which spawns browser **155** at step **1845**. The browser **155** requests the mailto link and token from the communication unit **167** at step **1850**. The communication unit **167** shares the request with the URL translator **182** at step **1855**. The URL translator **182** translates the short URL link at step **1857** and shares the corresponding mailto link and token with the communication unit **167** at step **1860**. The communication unit **167** shares the mailto link and token with the browser **155** at step **1865**, triggering email client **156** at step **1870** to generate the response email with the token at step **1872**. The opening of the browser may not be visible or discernable to the customer. The response email may be addressed to the e-commerce system **140** and include the token. The token may be located anywhere in any field of the email. The customer device **150** sends the email and shares the message with communication unit **167** at step **1875**. The message is authenticated at step **1880**. The communication unit **167** shares the token with the token manager **165** and the token is decoded at step **1882**. If either the authentication or the token decoding does not meet requirements, the customer device **150** may receive a response message requesting an additional confirmation or a URL link that navigates the customer device **150** to a signup page and/or checkout. If all requirements are met, the token manager notifies the communication unit **167** that requirements are met at step **1885**. The communication unit **167** makes a payment request to payment processor **160** at step **1890**. The payment(s) are processed at step **1892** and updates and notifications are sent out.

Related to the discussion of calendars with respect to FIG. **10**, the present system and method provides details where registered customers using the customer device **150** of the e-commerce system **140** may aggregate multiple payment schedules through their account with the e-commerce system **140** or third party. This aggregation may occur by accessing a secure web-page account or by downloading an application that accesses the e-commerce system **140**. Payment scheduling is related to the description of other figures described herein. FIG. **10** describes a single schedule payment. FIGS. **19-21** describe multiple payment schedule and various uses of media such as SMS, email and social media.

FIG. **19** is an illustration of a transactional flow diagram **1900** illustrating the processes where a customer via a customer device **150** may request the e-commerce system **140** to aggregate multiple payment schedules and send payment email reminders. Pay schedules may include paying monthly invoices, rent, credit card payments, or salaries, among other forms of payment. A customer via customer device **150** may request messaging to remind them to make payments via email. The customer may schedule a single message that combines their payments into a single authorization message and the e-commerce system **140** may process each payment separately. The customer via customer device **150** may request their bills due by messaging the e-commerce system **140**. For example, if a customer wants to see what they owe on a bill, they send a 'Bill Me' message to a specific phone number. The e-commerce system **140** sends the customer device **150** the amount that is due in the next 30 days. The customer may have an option to pay each bill two days before it is due. The frequency and time periods for payment(s) may be controlled by the customer using customer device **150**. Messages may also be offered to pay each bill separately or to authorize a payment at a specific time before the bill is due. For example 'Pay this bill two days before due date.' may be one option.

In this example depicted in FIG. **19** there are shown two vendors, however any number of vendors and libraries may be used. Additionally, other resources may be located in other entities. The customer using the customer device **150** may access a web browser **155** to log in to their account with the e-commerce system **140** via the communication unit **167** at step **1905**. The customer may request information from the multiple vendors, for example, vendor A **120**A and vendor B **120**B at step **1910**. Vendor A **120**A and vendor B **120**B may be registered with the e-commerce system **140** at

step **1917**. Vendor A **120**A and vendor B **120**B may share the required information with communication unit **167** at step **1915**. The vendor system **120** may be able to update the e-commerce system **140** without the customer logon. An alert message may be triggered at step **1922** and the library unit **169** shares the required information with the communication unit **167** at step **1925**. An alert may be triggered by any number of requirements such as due dates, bills, and customer scheduling. This request may also be triggered by a message sent from the customer device **150**.

The communication unit **167** requests required tokens from the token manager **165** at step **1930**. The token manager **165** generates the tokens for the offer(s) at step **1932** and shares the generated tokens with the communication unit **167** at step **1935**. The communication unit **167** generates the offer message at step **1937** with the token in a mailto link. Each offer is associated with a mailto link and token and is shared with the customer device **150** at step **1940**. The customer via customer device **150** accesses the message via the email client **156** and selects the mailto link to generate the response message addressed to the e-commerce system **140** with the token at step **1942**. The token may be located anywhere in any field of the email. The message is shared with the communication unit **167** at step **1945** and the message is authenticated at step **1950**. The communication unit **167** shares the token with the token manager **165** and the token is decoded at step **1952**. If either the authentication or the token decoding does not meet requirements, the customer device **150** may receive a response message requesting an additional confirmation or a URL link that navigates the customer device **150** to a signup page and/or checkout. If the requirements are met, the token manager **165** notifies the communication unit **167** that requirements are met at step **1955**. The communication unit **167** makes a payment request at step **1960** and shares it with the payment processor **160**. The payments are processed at step **1962** and updates and notifications are sent at step **1965**. Alternatively, token generation may be substituted for the method described in FIG. **8**, where the email address of the ecommerce system **140** is designated exclusively to trigger an action based on the authentication of the message.

FIG. **20** is an illustration of a transactional flow diagram **2000** illustrating the processes where a customer via a customer device **150** may request the e-commerce system **140** to aggregate multiple payment schedules and send payment reminders via SMS or social media. The customer using the customer device **150** may access a web browser **155** to log in to their account with the e-commerce system **140** via the communication unit **167** at step **2005**. The customer may request information from the multiple vendors, for example, vendor A **120**A and vendor B **120**B at step **2010**. Vendor A **120**A and vendor B **120**B may be registered with the e-commerce system **140** at step **2017**. Vendor A **120**A and vendor B **120**B may share the required information with communication unit **167** at step **2015**. The vendor system **120** may be able to update the e-commerce system **140** without the customer logon. An alert message may be triggered at step **2022** and the library unit **169** shares the required information with the communication unit **167** at step **2025**. An alert may be triggered by any number of requirements such as due dates, bills, and customer scheduling. This request may also be triggered by a message sent from the customer device **150**.

The communication unit **167** requests required tokens from the token manager **165** at step **2030**. The token manager **165** generates the tokens for the offer(s) at step **2032** and shares the generated tokens with the communication unit **167** at step **2035**. The communication unit **167** generates the offer message at step **2037** with the token via SMS or social media post. Each offer is associated with a token and generates a response SMS or social media post addressed to the e-commerce system **140** at step **2040**. The customer using SMS or social media application **159** generates the response message addressed to the e-commerce system **140** with the token as part of the message at step **2042**. The SMS or social media post share the message with the communication unit **167** and the message is authenticated at step **2050**. The communication unit **167** shares the token with the token manager **165** and the token is decoded at step **2052**. If either the authentication or the token decoding does not meet requirements, the customer device **150** may receive a response message requesting an additional confirmation or a URL link that navigates the customer device **150** to a signup page and/or checkout. If the requirements are met, the token manager **165** notifies the communication unit **167** that requirements are met at step **2055**. The communication unit **167** makes a payment request at step **2060** and shares it with the payment processor **160**. The payments are processed at step **2062** and updates and notifications are sent at step **2065**.

FIGS. **21**A and **21**B collectively illustrate a transactional flow diagram **2100** illustrating the process where a customer via customer device **150** requests the e-commerce system **140** to aggregate multiple payment schedules and send SMS or social media reminders to enable customers via customer device **150** to generate response payment emails The customer using the customer device **150** to access a web browser, **155** logs on to their account with the e-commerce system **140** via the communication unit **167** at step **2105**. The customer may request information from the multiple vendors **120**, for example, vendor A **120**A and vendor B **120**B and allowing the e-commerce system **140** to query vendor A **120**A and vendor B **120**B for the information at step **2110**. Vendor A **120**A and vendor B **120**B are both registered with the e-commerce system **140** at step **2117**. Vendor A **120**A and vendor B **120**B both share the required information with the communication unit **167** at step **2115**. The account information may be stored in the library unit **169** at step **2120**.

The vendor system **120** may be able to update the e-commerce system **140** without the customer logon at step **2105**. An alert message is triggered at step **2122** and the library unit **169** shares the required information with the communication unit **167** at step **2125**. An alert may be triggered by any number of triggers such as due dates, bills, and customer scheduling. An alert may also be triggered by a message sent from the customer device **150**.

The communication unit **167** requests, at step **2130**, required tokens from the token manager **165**. The token manager **165** and URL translator **182** generate a corresponding short token and long token for each request at step **2132**. The token manager **165** and URL translator **182** generate a short URL link that corresponds to the short token and long token. The token manager **165** and URL translator **182** stores the tokens and the short URL link at step **2137**. The token manager **165** shares the short URL link with the communication unit **167** at step **2135**. The communication unit **167** generates an SMS offer or social media post offer message with a short URL link(s) at step **2140** and shares it with the customer device **150** at step **2145**.

The customer via customer device **150** using SMS or social media application **159** selects from the short URL link(s) in the message at step **2147**. This selection opens a web browser **155** at step **2150** which requests the mailto link

and token from the communication unit **167** at step **2155**. There may be multiple offers and multiple short URL links. The communication unit **167** shares the request with the URL translator **182** at step **2160**. The URL translator **182** translates the short URL link at step **2162** and shares the corresponding mailto link and short token with the communication unit **167** at step **2165**. The communication unit **167** shares the mailto and token with the browser **155** at step **2170** which triggers the email client **156** at step **2175**. At step **2177**, the email client generates the response email with short token. The opening of the browser may not be visible or apparent to the customer. The response email may be addressed to the e-commerce system **140** and the message holds the short token. The short token may be located anywhere in any field of the response email. The response email is sent at step **2180** to share the message with the communication unit **167**. The response message is authenticated at step **2185**. The communication unit **167** shares the short token with the token manager **165**. The token manager **165** matches the short token with the long token and decodes the long token at step **2187**. If either the authentication or the token decoding does not meet requirements, the customer via customer device **150** may receive a response message requesting an additional confirmation or a URL link that navigates the customer device **150** to a signup page and/or checkout. If the requirements are met, the token manager **165** notifies the communication unit **167** that requirements are met at step **2190**. The communication unit **167** makes a payment request at step **2195** and shares it with the payment processor **160**. The payments are processed at step **2197** and updates and notifications are sent at step **2199**.

The present system and method also include a design for in-store checkout using SMS, social media, and email based checkouts. This function may also be used for mass assemblies of people, all or many of whom wish to make a payment. An example of a mass assembly may be a religious service or political rally, where the people in the congregation each desire to make a payment. The system and method may also include a televised, radio broadcast or advertisement. The e-commerce system **140** or vendor **120** may initiate a transaction online. The cashier may inform the customer of the amount owed and the telephone number to send a message via SMS. By entering the phone number into an SMS application on customer device **150** and transmitting the amount, for example, '$19.95', via SMS, may cause the e-commerce system **140** to provide an offer message sent to the customer device **150** for confirmation. Once confirmed the cashier is notified. This notification may be an SMS, social media post or email stating that the amount has been processed. The cashier may be notified via a cashier e-commerce application or an existing store application using an e-commerce plugin.

FIG. **22**A is a transactional flow diagram **2200** explaining the in-store or mass assembly process where a payment is made by SMS and social media with an email-based checkout. In the example depicted in diagram **2200**, the customer may be in a store trying to make a payment, such as pay a bill, or make a donation, using customer device **150**. The customer may be verbally told or optically provided the amount owed by a cashier for example. A phone number accepting the payment may also be provided. The customer, using the customer device **150** with the SMS or social media application **159**, messages the phone number or posts to the social media account of vendor **120** at step **2205**.

Referring now also to FIG. **22**B, which depicts an illustrative message **2290** of an SMS message where the customer messages the amount they wish to pay or $60 **2295**. The customer device **150** shares the message containing the amount of the charge with the communication unit **167** at step **2210**. The communication unit **167** requests at step **2215** a short token and a corresponding long token to be generated by the token manager **165**. The short token and long token are generated by the token manager **165** at step **2220**. A short URL applied to that short token and long token by the token manager **165** and the URL translator **182** at step **2225**. The short URL corresponds to the short token and long token. The short URL is shared with the communication unit **167**. The communication unit **167** generates an offer message with the short URL link and shares it with the customer device **150** at step **2230**.

FIG. **22**B illustrates an example of the short URL link. This message may be in the form an SMS, email social media post or may appear on a web browser. The customer, using the application on their device **150**, selects the URL link **2297** as confirmation of the payment at step **2232**. There may be multiple options and multiple short links for each offer. When a short URL is selected, the browser **155** on customer device **150** is initiated at step **2235** and the mailto link with token is requested from the communication unit **167** at step **2237**.

The communication unit **167** shares the request at step **2240** with the URL translator **182**, which translates the short URL at step **2242** and shares the mailto link and short token with the communication unit **167** at step **2245**. The communication unit **167** shares the mailto link and short token with the customer device **150** web browser **155** at step **2247**. The customer may not see the activation of the web browser **155**. This triggers the email client **156** at step **2250** to generate the response email with the short token at step **2252**. The short token may be in any field and the email is addressed to the e-commerce system **140**. FIG. **22**C illustrates an example of the response email **2293**. The token is integrated into the email address 'To:' field **2294**. The token may be anywhere in the email. The email may not require a token as described in FIG. **8**. The email is sent at step **2255** to the communication unit **167** which authenticates the message at step **2260** and shares the short token with the token manager **165**. The token manager **165** matches the short token with the long token. The long token is decoded at step **2262** by the token manager **165**. If either the authentication or the token decoding does not meet requirements, the customer device **150** may receive a response message requesting an additional confirmation or a URL link that navigates the customer to a signup page and/or checkout. If the requirements are met, the token manager **165** notifies the communication unit **167** that the requirements are met at step **2265**. The communication unit **167** makes a payment request at step **2270** and shares it with the payment processor **160**. The payments are processed at step **2272** and updates and notifications are sent out at steps **2275**, **2280**, **2285**.

FIGS. **23**, **24**A and **24**B disclose a design related to FIGS. **8** and **9** where the e-commerce system processes transactions based on registered email addresses arriving at an address that determine a specific action.

FIG. **23** is transactional flow diagram **2300** illustrating a request for payment by SMS and/or social media with an email-based payment method using the mailto link in a SMS and/or social media post not requiring a token. The vendor **120** requests an offer message be sent from the communication unit **167** at step **2305**. The communication unit **167** requests the required information from the library unit **169** at step **2310** and the library unit **169** shares the required information with the communication unit **167** at step **2315**.

The communication unit **167** generates an SMS and/or social media post at step **2317** and shares the generated prompt with the customer device **150** at step **2320**. The customer using the customer device **150** views the message on the SMS or social media application **159** and selects an option to generate the response at step **2322**. The generated response is shared with the communication unit **167** at step **2325**. For example, the customer may be asked to identify the amount of money they wish to donate. The customer inputs $20 into customer device **150** and shares that amount with the communication unit **167**. The communication unit **167** authenticates the message and decodes the information at step **2327**. The communication unit **167** updates the library unit **169** at step **2330** and the library unit **169** stores a pending charge at step **2332** associated with the customer. The library unit **169** shares the required information with the communication unit **167** at step **2335**. The communication unit **167** generates an offer SMS and/or social media message at step **2337** addressed to the account associated with the customer's other account addresses (email) and shares the offer message with the customer device **150** using the SMS or social media application **159** at step **2340**. This message may include at least one mailto link.

The customer, using the customer device **150**, may view the message on the SMS or social media application **159**. The customer selects the mailto link which opens the email client **156** and generates the response email addressed to the required email address of the e-commerce system **140** at step **2345**. This mailto link may be embedded behind an image. There may be other written content required for other purposes including legal requirements and/or user experience. The response email with the required address may be shared at step **2350**. The communication unit **167** authenticates the message at step **2352** using, but not limited to, SPF DKIM. Based on the combination authentication and the knowledge of the sender and received addresses, the communication unit **167** updates the library unit **169** at step **2355** and requests payment info. The communication unit **167** and library unit **169** determine that all requirements are met at step **2357**. If either the authentication or the token decoding does not meet requirements, the customer via customer device **150** may receive a response message requesting an additional confirmation or a URL link that navigates the customer to a signup page and/or checkout. If all requirements are met at step **2357**, the library unit **169** updates the communications unit **167** at step **2360** with a payment request and the communications unit **167** shares a payment request with the payment processor **160** at step **2365**. The payment is then processed at step **2367** and notifications and updates are shared.

FIGS. **24**A and **24**B collectively is a transactional flow diagram **2400** illustrating a request for payment by SMS and/or social media with an email-based payment method using a short URL link in a SMS and/or social media post. The vendor **120** requests an offer message be sent from the communication unit **167** at step **2405**. The communication unit **167** requests the required information at step **2410** from the library unit **169**. The library unit **169** shares the required information with the communication unit **167** at step **2415**. The communication unit **167** generates at step **2417** an SMS and/or social media post and shares a prompt with the customer device **150** at step **2420**. The customer using the customer device **150** views the message on the SMS or social media application **159** and selects an option in the message at step **2422**. The customer device **150** sends a message back to the communication unit **167** at step **2425** and shares their request. For example, the customer may be asked to write the amount of money they wish to donate. The customer enters '$20' into their customer device **150** and shares that message with the communication unit **167**. The communication unit **167** authenticates the message and decodes the information at step **2427**. The communication unit **167** updates the library unit **169** at step **2430** and the library unit **169** stores a pending charge associated with the customer at step **2432**. The library unit **169** shares the required information with the communication unit **167** at step **2435**. The communication unit **167** generates a mailto link with the required address for the payment and a shortened URL link associated with that mailto link and shares this with the URL translator **182** at step **2440**. The communication unit **167** generates a SMS and/or social media post with the short URL link at step **2442** and shares them with the customer device **150** at step **2445**.

The customer using the customer device **150** views the SMS and/or social media post on an application. The customer using the customer device **150** via SMS or social media **159** selects the short URL link at step **2447** which opens the browser **155** at step **2505**. The browser **155** requests the required mailto link from the communication unit **167** at step **2455**. The communication unit **167** shares the request with the URL translator **182** at step **2460**. The URL translator **182** translates the short URL to the associated mailto link at step **2462** and shares this with the communication unit **167** at step **2465**. The communication unit **167** shares the mailto link with the web browser **155** at step **2470** which triggers the email client **156** to open at step **2475**. The email client **156** generates the response email with the required address at step **2477**. There may be other written content required for other purposes such as legal or user experience. The customer device **150** shares response email with the required address at step **2480**. The communication unit **167** authenticates the message at step **2482** using, but not limited to, SPF DKIM. Based on the combination authentication and the knowledge of the sender and received addresses, the communication unit **167** updates the library unit **169** and requests payment info at step **2485**. The communication unit **167** and library unit **169** determine that all requirements are met at step **2487**. If either the authentication or the token decoding does not meet requirements, the customer device **150** may receive a response message requesting an additional confirmation or a URL link that navigates the customer to a signup page and/or checkout. If all requirements are met, the library **169** updates the communications unit **167** with a payment request at step **2490** and the communications unit **167** shares a payment request with the payment processor **160** at step **2495**. The payment is then processed at step **2497** and notifications and updates are shared.

The present system and method also includes an e-commerce system **140** that integrates SMS and other texting formats, social media, email and pledges with e-commerce payment processing described herein. Donors and customers often prefer to promise to make a payment prior to actually making the payment. Fundraisers refer to this as a pledge. For-profit vendors may use this as an online shopping cart, preorder or in a crowdsourcing capacity. For the non-profit it is an opportunity to identify donors who are considering making a donation. Currently, the process of pledging is disorganized and unsystematic. The present system and method collects pledges through various media and allows non-profits to automate the pledging process into a payment process. The e-commerce system **140** collates pledge responses into a list of potential donors. The e-commerce system **140** then provides various ways in which the non-

profit or vendor may use the information, such as visual displays of pledging totals or the solicitation of payment based on a pledge. As disclosed herein, a vendor **120** may be substituted for nonprofit or fundraiser.

The e-commerce system **140** offers customers and donors multiple ways to donate and make purchases. In order to use the e-commerce system **140**, customers via customer device **150** may be required to provide a wide range of information. Customers who do not wish to provide all of the required information may choose to provide only part of the required information. The present system and method enables customers to make a pledge for a future payment without fully registering with the e-commerce system **140**. The e-commerce system **140** is designed to follow up and remind the customer to register and complete the payment for their donation or purchase. Additionally, vendors **120** and fundraisers may access the status of these pledges at any time and use that for marketing and research.

FIG. **25** is a transactional flow diagram **2500** illustrating the process where a customer uses customer device **150** to pledge to make a payment and the vendor **120** may use those totals for marketing and payment. A vendor **120** using a vendor device accesses the e-commerce system **140** and sets the criteria for a campaign at step **2510**. For example, the vendor may generate a series of links that represent a pledge with each link of the series representing a different amount of money or a phone number where customers may message pledges with display graphics among other attributes. The e-commerce system **140** generates various resources such as payment capture pages and payment buttons or links that may be used in messaging and webpages.

The e-commerce system **140** shares the campaign resources with the vendor **120** at step **2520**. The vendor **120** uses these materials in their marketing. For example, the e-commerce system **140** may provide the vendor **120** with a phone number which the vendor **120** may use in print advertising to gather pledges from customers or they may email or post on social media a link that is associated with a pledge amount at step **2530**. Alternatively, the marketing messaging may come from the e-commerce system **140** directly on behalf of the vendor **120**. The customer using customer device **150** enters the pledge amount at step **2535**. The pledge amount is shared with the e-commerce system **140** at step **2540**. The e-commerce system **140** decodes and authenticates the message at step **2545**. The e-commerce system **140** updates the e-commerce system database with the new pledge information. There may be additional messaging required to determine the pledge. Depending on the customer's choice of media for conveying the pledge at step **2540**, the e-commerce system **140** stores their email address, phone number or social media information. Although not depicted in this diagram, payment processing and registration may occur based on the customer's registration status.

The e-commerce system **140** shares the pledge totals at step **2550** with the vendor **120**. The e-commerce system **140** may also share totals and results based on the vendor's **120** criteria with the customers through customer device **150** at step **2560**. For example the vendor **120** may provide a graphic representation of the total pledges. Although FIG. **25** describes a general method of processing a pledge that may precede a payment, pledging may be substituted for payment processing in FIGS. **8**B, **12** and **13**.

FIG. **26** is a diagram **2600** illustrating the steps required for the e-commerce system **140** to process pledges, provide updates and payment options. Pledges generally are the expression of the desire or promise to make a payment. Pledges may provide value to vendors **120** beyond the eventual monetary payment. Alternatively, a pledge may include a promise to take action. For vendors **120**, pledges are a way to gauge the amount a customer is able or willing to donate or purchase. This data adds value to marketing campaigns and often spurs customer participation in fundraisers and sales. The present system integrates a series of marketing tools for collecting pledges and integrates them into the disclosed system **100**.

FIG. **26** illustrates a method **2600** configured to allow a customer to make a pledge. Method **2600** includes six section identified as sections A, B, C, D, E and F. Section A illustrates a hosted web page or iframe window that floats on the vendor's site. Section B illustrates a situation where the customer is prompted to message the e-commerce system their pledge. Section C illustrates the step where all pledges from customers are parsed based on whether the customers are registered or not registered with the e-commerce system. Section D illustrates a portion of method **2600** allowing a customer registered with the e-commerce system **140** to complete a pledge. Section E illustrates a portion of method **2600** allowing a customer not registered with the e-commerce system **140** to complete a pledge. Section F illustrates a portion of method **2600** where the e-commerce system **140** provides updates on pledge totals, such as a campaign's status.

The customer using the customer device **150** accesses the website of the vendor **120** using a web browser or other application at step **2602**. The customer accesses the pledging tool which may be an iframe inserted on top of the page or may be a dedicated webpage on the site of the vendor **120** at step **2604**. In one example, this may be a series of mailto links each associated with a different amount the customer may wish to pledge. Alternatively, the customer may be able to use customer device **150** to enter an amount they wish to pledge at step **2606** and a link may be generated for the transaction by the e-commerce system **140** at step **2608**. This may occur because the customer using the customer device **150** selects the mailto link and triggers the email client to open, for example. Using the email client, the response email is generated and may include the token. The response email may be addressed to the e-commerce system **140**. The token may be anywhere in the email. The customer device **150** sends the email sharing the token with the e-commerce system **140**. The e-commerce system **140** authenticates the email and decodes the token at step **2610**. Alternatively, the customer may enter their information using the customer device **150** on the webpage of the vendor **120** and submit the information via the webpage.

The customer device **150** is prompted to send a message to the e-commerce system **140** identifying the pledge at step **2612**. This prompt may be verbal, print based, email SMS, social media based or another form of messaging. The prompt requires the customer using the customer device **150** to enter at step **2614** and send a message to a specific address identifying the amount at step **2616**. The address may be associated with the vendor **120**. This address may be managed by the e-commerce system **140**. The e-commerce system **140** receives, decodes and authenticates the message at step **2618**. The pledges from customers are parsed based on whether the customers are registered or not registered with the e-commerce system at step **2620**.

The customer is recognized as registered with the e-commerce system **140** at step **2622**. The customer pledge is updated at step **2624** to the vendor **120** campaign based on the amount the customer chose to pledge. Based on the customer's status as registered with the e-commerce system **140**, the e-commerce system **140** may process the payment

based on the pledge amount at step **2626**. Alternatively, the e-commerce system **140** may message the customer device **150** a confirmation message requiring a response to the e-commerce system **140** in order to complete the payment.

The e-commerce system **140** recognizes that the customer is not registered at step **2628**. The customer may be partially registered. The customer pledge is updated to the vendor campaign based on the amount the customer chose to pledge and the address of the customer at step **2630**. Based on the customer's status as partially registered with the e-commerce system **140**, the e-commerce system **140** generates a follow up offer message and sends it on behalf of the vendor **120** at step **2632**. This message may have a link included in the message. The customer using the customer device **150** accesses the message by selecting the link at step **2634**. By selecting the link the browser application is triggered on the customer device **150** opening a signup web page based on the pledge amount at step **2636**. The customer via customer device **150** enters the required information for the payment at step **2638** and the customer device **150** submits the information for payment. If all requirements are met, the e-commerce system **140** processes the payment at step **2640**.

Based on the campaign requirements, the e-commerce system **140** may periodically update the vendor **120** and customer device **150** on the amounts pledged at step **2642**. For example the e-commerce system **140** may provide a graph displaying the amount donated up to that point. The customer device **150** may receive these graphs from the vendor **120** or the e-commerce system **140**. The vendor **120** may have the capacity to limit information that customer devices **150** can access based on registration factors.

The above disclosed invention presents to vendors **120** many business opportunities. The tools may be used to leverage relationships with other vendors **120** and customers via customer devices **150**. Even if these tools are not used by vendors **120** they are useful within the operation of the e-commerce system **140**. The ability to associate customer devices **150** with specific vendors **120**, the ability to segment email lists and to reference payment offers are features that improve security and scaling. If vendor **120** security is compromised, some accounts may be shut down until the breach is resolved letting a portion of the customer device **150** continue to access the e-commerce system **140**. The disclosed invention may be integrated directly into the vendor system **120** or a third party such as an Email Service Provider **170**, Customer Relationship Management, social media, SMS, telecommunications or Email Client.

Although in the above examples the vendor **120** sends messages to prompt the customer into making payments, the customer via customer device **150** may initiate a request for payment on their own. A customer may use customer device **150** view a printed ad or be told verbally where to message the required requests to begin the process. Although the library unit **169** and URL translator **182** are located in the e-commerce system **140** this is only an example, the units **169**, **182** may be configured and located elsewhere. For example, the payment processor **160** may also be the vendor **120** or the e-commerce system **140** may be integrated with the payment processor **160**.

Various kinds of cardholders and banking instruments may be used to process payments which may not be dependent on carrier participation in the payment processing. This may include a virtual currency such as bitcoin. This may also integrate a gift card system.

Additionally, a payment processor **160** could also be a vendor **120** and offer payments by email. Payment processors **160** and the associated payment gateways may be integrated with the e-commerce system **140** and restrict access to other payment processors **160** and associated gateways.

Although features and elements are described above in particular combinations, one of ordinary skill in the art will appreciate that each feature or element can be used alone or in any combination with the other features and elements. In addition, the methods described herein may be implemented in a computer program, software, or firmware incorporated in a computer-readable medium for execution by a computer or processor. Examples of computer-readable media include electronic signals (transmitted over wired or wireless connections) and computer-readable storage media. Examples of computer-readable storage media include, but are not limited to, a read only memory (ROM), a random access memory (RAM), a register, cache memory, semiconductor memory devices, magnetic media such as internal hard disks and removable disks, magneto-optical media, and optical media such as CD-ROM disks, and digital versatile disks (DVDs). A processor in association with software may be used to implement a radio frequency transceiver for use in a customer device or any host computer.

What is claimed is:

1. A method that improves security of a computer network using Simple Mail Transfer Protocol (SMTP), the method comprising:

receiving, by a processor of an e-commerce system in the computer network, a command email address request, wherein the command email address request comprises an action for a particular transaction of a registered user;

generating, by the processor of the e-commerce system in the computer network, the command email address for the e-commerce system;

assigning, by the processor of the e-commerce system in the computer network, the command email address to the action for the particular transaction of the registered user;

receiving, by the processor of the e-commerce system, a first email message from a sender address utilizing SMTP, wherein the first email message is received by the processor via the command email address;

validating, by the processor, the sender address to generate a validation result using at least one of DomainKeys Identified Mail (DKIM) and Sender Policy Framework (SPF) protocols;

authenticating, by the processor, the sender address as the registered user to generate an authentication result, wherein the authenticating is performed by comparing the sender address to a list of registered users;

identifying, by the processor, the action for the particular transaction based on the command email address and the sender address;

retrieving, by the processor, additional information for the action from a vendor system in the computer network;

transmitting, by the processor, a second email message to the sender address based on the validation result and the authentication result, wherein the second email message is transmitted utilizing SMTP and contains the additional information;

receiving, by the processor, a third email message from the sender address utilizing SMTP via a confirmation email address of the e-commerce system, wherein the third email message is received in response to activation of a mailto link contained in the second email message; and

performing, by the processor, the action in response to receiving the third email message.

2. The method of claim 1, further comprising:

transmitting, by the processor, a first mailto link, wherein the first email message is received in response to activation of the first mailto link, wherein the first email message further includes information contained in the first mailto link.

3. The method of claim 1, wherein the method further includes:

sending, by the processor, a registration message to the sender address when the authentication result indicates the sender address is not the registered user, wherein the registration message includes a link to a sign-up that registers the sender address with the e-commerce system;

receiving, by the processor, a registration in response to activation of the link; and

registering, by the processor, the sender address with the e-commerce system as the registered user.

4. The method of claim 3, wherein the link is a Universal Resource Locator (URL) link or a mailto link.

5. The method of claim 1, wherein the command email address is one of a plurality of email addresses of the e-commerce system, and

wherein the confirmation email address is different than the command email address.

6. The method of claim 2, wherein the first mailto link is transmitted as an Short Messaging Standard (SMS) message or as an email message.

7. A system that improves security of a computer network, the system comprising:

a communication interface that is communicatively coupled to a vendor system and a user device via the computer network;

a memory that stores a plurality of addresses; and

a processor that is communicatively coupled to the communication interface and the memory;

wherein the processor is configured to:

receive a command email address request, wherein the command email address request comprises an action for a particular transaction of a registered user;

generate the command email address for the e-commerce system;

assign the command email address to the action for the particular transaction of the registered user;

receive, using the communication interface, a first email message from a sender address via SMTP, wherein the first email message is received from the user device by the processor via the command email address;

validate the sender address to generate a validation result using at least one of DomainKeys Identified Mail (DKIM) and Sender Policy Framework (SPF) protocols to generate a validation result;

compare the sender address to the plurality of addresses to generate an authentication result;

identify the action for the particular transaction based on the command email address and the sender address;

retrieve, using the communication interface, additional information for the action from the vendor system;

transmit, using the communication interface, a second email message to the sender address based on the validation result and the authentication result, wherein the second email message is transmitted utilizing SMTP and contains the additional information;

receive, by the processor, a third email message from the sender address via a confirmation email address using SMTP, wherein the third email message is received in response to activation of a mailto link contained in the second email message; and

perform the action in response to receiving the third email message.

8. The system of claim 7, wherein the processor is further configured to:

transmit a first mailto link, wherein the first email message is received in response to activation of the first mailto link, within the first email message further includes information contained in the mailto link.

9. The system of claim 7, wherein the processor is further configured to:

send, using the communication interface, a registration message to the sender address when the authentication result indicates that the sender address is not a registered user, wherein the registration message includes a link to a sign-up,

receive, using the communication interface, a registration in response to activation of the link; and

register the sender address in the memory as the registered user.

10. The system of claim 7, wherein the system is configured to receive email messages from a plurality of email addresses, wherein the plurality of email addresses includes the command email address,

wherein the confirmation email address is different than the command email address.

11. The system of claim 8, wherein the first mailto link is sent as a Short Messaging Standard (SMS) message or as an email message.

12. A non-transitory computer readable storage medium storing instructions for improving security of a computer network, the instructions when executed by a processor of an e-commerce system, cause the processor to execute a method, the method comprising:

receiving a command email address request, wherein the command email address request comprises an action for a particular transaction of a registered user;

generating the command email address for the e-commerce system;

assigning the command email address to the action for the particular transaction of the registered user;

receiving, using a communication interface, a first email message from a sender address utilizing SMTP, wherein the first email message is received by the processor via the command email address of the e-commerce system;

validating the sender address to generate a validation result using at least one of DomainKeys Identified Mail (DKIM) and Sender Policy Framework (SPF) protocols;

comparing, using a memory, the sender address to a plurality of addresses to generate an authentication result;

identifying the action for the particular transaction based on the command email address and the sender address;

retrieving, by the processor, additional information for the action from a vendor system in the computer network;

transmitting, by the processor, a second email message to the sender address based on the validation result and the authentication result, wherein the second email message is transmitted utilizing SMTP and contains the additional information;

receiving, by the processor, a third email message from the sender address via a confirmation email address of the e-commerce system utilizing SMTP, wherein the

third email message is received in response to activation of a mailto link contained in the second email message; and

performing the action in response to receiving the third email message.

13. The non-transitory computer readable storage medium of claim **12**, wherein the method further includes:

transmitting, by the processor, a first mailto link, wherein the first email message is received in response to activation of the first mailto link, wherein the first email message further includes information contained in the first mailto link.

14. The non-transitory computer readable storage medium of claim **12**, wherein the method further includes:

sending, by the processor using the communication interface, a registration message to the sender address when the authentication result indicates that the sender address is not a registered user, wherein the registration message includes a link to a sign-up that registers the sender address with the e-commerce system;

receiving, by the processor, a registration in response to activation of the link; and

registering, by the processor, the sender address with the e-commerce system as the registered user.

15. The non-transitory computer readable storage medium of claim **12**, wherein the method further includes:

configuring, by the processor, the e-commerce system to receive email message via the plurality of addresses, wherein the command email address is one a plurality of email addresses of the e-commerce system,

wherein the confirmation email address is different than the command email address.

16. The non-transitory computer readable storage medium of claim **13**, wherein the first mailto link is sent as a Short Messaging Standard (SMS) message or as an email message.

17. The method of claim **1**, wherein the third email message is received via a different email address than the command email address.

18. The method of claim **1**, wherein the second email message contains a plurality of mailto links, wherein each of the plurality of mailto links is associated with a different email address of the e-commerce system.

19. The system of claim **7**, wherein the third email message is received via a different email address than the command email address.

20. The non-transitory computer readable storage medium of claim **12**, wherein the third email message is received via a different email address than the command email address.

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