ABSTRACT

A system for optimizing the transfer of funds from an account holder to an associate. The system identifies the geographic location of a first financial institution involved in the transaction. The system selects from a plurality of financial institutions a second financial institution which is located near the first financial institution to be involved in the transaction. Selecting a second financial institution nearby the first financial institution facilitates the transaction and reduces the time transaction funds are unavailable.
Fig 5

Account holder sends system predetermined information.

System collects information from account holder.

System uses information to collect more information.

System determines optimal holding account.

System returns routing and account numbers to account holder.
**Fig. 6**

- Account holder sends predetermined information.
- System collects predetermined information.
- System determines if sufficient funds.
  - NO
  - System uses collected information to collect additional predetermined information.
  - System determines optimal holding account.
  - System initiates the transfer of funds.
- Returns Error Message.
TRANSACTION PROCESSING SYSTEM

TECHNICAL FIELD

[0001] The disclosed embodiments relate generally to financial transactions and, in particular, to using financial institution information to increase the efficiency of financial transactions.

BACKGROUND

[0002] Conventional financial transactions only support traditional financial transfers from one financial institution to another. The use of various systems, including clearinghouse systems to facilitate the transfer of funds can cause undesirable delays during which the funds may not be accessible.

SUMMARY

[0003] The present invention includes systems and methods for modifying the routing of funds from an account holder to an associate to increase the efficiency of the transaction. An account holder authorizes the transfer of a predetermined amount of account holder funds to an associate. The location of a receiving financial institution associated with the associate is determined and a transfer financial institution is selected from a plurality of financial institutions based upon proximity to the receiving financial institution. Funds are transferred from the transfer financial institution to the receiving financial institution and the account holder’s account is debited the amount of the transfer. The transfer financial institution is selected from the plurality of financial institutions to decrease the time associated with the transfer of the funds. The features and advantages described in this summary and the following detailed description are not all-inclusive. Many additional features and advantages will be apparent to one of ordinary skill in the art in view of the drawings, specification and claims presented herein.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] The present invention will now be described, by way of example, with reference to the accompanying drawings in which:

[0005] FIG. 1 is a block diagram of the financial institution architecture in accordance with one embodiment;
[0006] FIG. 2 is a block diagram of the system architecture in accordance with one embodiment;
[0007] FIG. 3A is a block diagram of a home page of a website used in accordance with one embodiment;
[0008] FIG. 3B is a block diagram of a registration webpage used in accordance with one embodiment;
[0009] FIG. 3C is a block diagram of an account information webpage used in accordance with one embodiment;
[0010] FIG. 4A is a block diagram of a credit card deposit webpage used in accordance with one embodiment;
[0011] FIG. 4B is a block diagram of a deposit webpage used in accordance with one embodiment;
[0012] FIG. 5 is a flowchart illustrating depositing funds into the system used in accordance with one embodiment;
[0013] FIG. 6 is a flowchart illustrating receiving funds into the system used in accordance with one embodiment;
[0014] FIG. 7A is a block diagram of a transfer funds page of a website used in accordance with one embodiment; and
[0015] FIG. 7B is a block diagram of a transfer funds error page of a website used in accordance with one embodiment.

DETAILED DESCRIPTION

[0016] As shown in FIG. 1, a transaction processing system (100) is provided to allow a manager (102) to optimize the transfer of funds (104) from an account holder (106) to an associate (108). The system (100) collects funds (110), (112) and (114) from users (116), (118) and (120), and deposits the funds (110), (112) and (114) in a plurality of holding accounts (122), (124) and (126) located in a plurality of financial institutions (128), (130) and (132). When a user such as the account holder (106) wishes to originate a fund transfer, the system (100) dynamically determines an optimized transfer financial institution (128) or institutions (128) and (132) to make the transfer. By collecting information about the transfer and selecting an optimized transfer financial institution (128) based upon the information, the system (100) advantageously avoids the delays and other drawbacks of traditional financial transaction systems.

[0017] FIG. 2 is a block diagram of the architecture of the system (100) in accordance with one embodiment. As illustrated in FIG. 1, a server (134) associated with the manager (102) is provided with a front-end server (136), a network interface (138), a central processing unit (140), a user database (142) a financial institution database (144) and system software (146). Conventional features, such as firewalls, load balancers, application servers, failover servers, site management tools, as well as additional conventional and known features, are not shown to allow a clearer illustration of the novel features of the system. The manager (102) may be a financial institution, or any desired type of individual or entity.

[0018] When the account holder (106) wishes to use the system (100), the account holder (106) accesses the manager’s website (148) via a network (150) and provides identifying information (152) to create a user account (154) (FIGS. 1, 2, 3A). As used herein, the term “website” means any system providing content and is not limited to those systems supporting content provided via the Internet or the http protocol. In general, functions described herein as being performed on the server side may also be performed on the client side as appropriate.

[0019] Alternatively, the account holder (106) may provide the information (152) telephonically, via electronic mail, via facsimile or by any suitable method of communication (FIGS. 1 and 3A). The account holder (106) uses a client (156) to execute a browser (158) that connects to the server (136) via the network (150). The network (150) is typically the Internet, but may also be any network, including, but not limited to, a LAN, a MAN, a WAN, a mobile, wired or wireless network, a private network or a virtual private network. Although only a single client (156) and browser (158) are shown, it is to be understood that millions of clients may be supported and can be in communication with the server (134) at any given time. If desired, multiple servers may be used. The client (156) may include a variety of different computing devices. Examples of client devices are personal computers, digital assistants, personal digital assistants, mobile phones, smart phones, tablet devices or laptop computers. As will be obvious to one of ordinary skill in the art, the present invention is not limited to the foregoing devices.

[0020] The website (148) presents the account holder (106) with an interface (160) which prompts the account holder (106) to click a button (162) which causes the server (134) to display a request page (164) via a secure socket layer (SSL) or similar security protocol (FIGS. 1, 3A, 3B and 3C). The
account holder (106) enters the user information (152) in the boxes (166) provided and clicks the submit button (168). The system (100) creates a user account (170) associated with a username (172) and a password (174). The user account (170) includes an account balance (176) and account history (178) that may be displayed on an account webpage (180) in a manner such as that known in the art. The account holder (106) transfers funds into the user account (170) by any known means including, but not limited to, check, credit card, debit card, other ACH processing or a physically delivered cash deposit. The account holder (106) may also transfer funds into the account (170) via another user (116) of the system (100).

[0021] The account holder (106) has multiple options to deposit funds into the account (170). The account holder (106) may provide the associated financial institution (182) with routing and account numbers associated with the account (170). The associated financial institution (182) may be any type of financial institution. The associated financial institution (182) may transmit the funds and information regarding the transfer to an automated clearinghouse (184) that transmits the funds to a holding account (122) associated with the routing and account numbers. The system (100) then credits the account (170) with the funds.

[0022] Alternatively, the account holder (106) may add funds directly to the account (170) by using the client (156) to access a deposit funds webpage (186) residing on the server (134) (FIGS. 1, 2 and 4A). From the deposit funds webpage (184), the account holder (106) enters credit or debit card information (188), such as the credit card number (190), expiration date (192) and CVV number (194), along with an account number (196) identifying which account holder’s accounts (170) is to receive the funds. The account holder (106) clicks the submit button (198) and the funds are transferred to the system (100).

[0023] Alternatively, the system (100) may be configured to allow the account holder (106) to deposit the funds directly from an account associated with a third-party financial institution, the account holder (106) obtains from the system (100) dynamically generated routing and account numbers (200) for the deposit to reduce the transfer time associated with each transaction (FIGS. 1, 2 and 4B). The account holder (106) uses the client (156) to access a deposit funds webpage (202) residing on the server (134). Prior to the deposit, the account holder enters predetermined information (204) associated with the deposit on the deposit funds webpage (202). This information may include the name (206) of the depositing financial institution, the account number (208) of the account (170) the account holder wishes to receive the funds, the routing number (210) and any other information required by the manager (102). The account holder (106) clicks the submit button (212) and the deposit funds webpage (202) displays the dynamically generated routing and account numbers (200).

[0024] The account holder (106) provides the dynamically generated routing and account numbers (200) to the third-party financial institution (182) along with transfer instructions, whereas the third-party financial institution (182) transmits the funds and information regarding the transfer to an automated clearinghouse (184) that transmits the funds to a financial institution (130) and holding account (124) associated with the routing and account numbers (200). The system (100) then credits the account (170) with the funds.

[0025] If the ACH system (184) is used, the associated financial institution (182) is the OFDI. The account holder (106) forwards authorization for the transaction to the OFDI (ARC), point of purchase (POP), prearranged payments and deposits (PPD), telephone initiated-entry (TEL) or web-initiated entry (WEB) authorization. The OFDI then forwards the authorized request to an ACH operator, which passes it on the receiving depository financial institution (RDFI). In this case, the RDFI is the financial institution (130) associated with the holding account (124), which credits the account holder’s account (170) with the funds.

[0026] The system (100) dynamically generates the routing and account numbers (200) to optimize the fund transfer process. When the account holder (106) sends (214) the system (100) the predetermined information (204) by pressing the submit button (212), the system (100) collects (216) the predetermined information (204) and uses it to collect (218) additional the predetermined information (220) (FIGS. 1, 2, 4B and 5). As an example, the system (100) may use the routing and account numbers (210) to obtain the geographic location and routing sub-account of the third-party financial institution (182) from the financial institution database (144) located on the server (134). The system (100) may collect additional information from cached or “real-time” third-party providers, such as the ACH (184) system.

[0027] Using the predetermined information (204 and 220), the system (100) determines (222) the optimal holding account (122), (124) or (126) to receive the funds. This determination may be based upon which of the holding accounts (122), (124) or (126) are insured, which are under the Federal Deposit Insurance Corporation (FDIC) and/or National Credit Union Administrations (NCUA) insurance limit and by what amounts, as well as which of the holding accounts (122), (124) or (126) offer the greatest return on investment. Once the system (100) dynamically determines (222) the optimal holding account (122), (124) or (126) to receive the funds, the system (100) returns (224) the routing and account numbers (200) associated with the holding account (124) to the account holder (106) by displaying the routing and account numbers (200) on the webpage (202). In determining the optimal holding account, the system (100) may weigh all factors equally. Alternatively, the system (100) may employ algorithms contained within the system software (146) to determine the optimal holding account to receive the deposited funds. Preferably, the optimal holding account (124) as determined by the system (100) is located closest to the third-party financial institution (182) to reduce the transfer time associated with a deposit and thereby reduce the time during which the funds are not available.

[0028] The system (100) may also split the funds into a plurality of holding accounts (122), (124) or (126). Alternatively, the system (100) may receive the funds in a single holding account (124), before moving some or all of the funds to additional accounts (122) and (126) as desired. The system (100) may also use “real-time” information relating to the holding accounts (122), (124) or (126), other transactions and the proposed routing to dynamically select the optimal holding account (124).

[0029] The foregoing process is used to create multiple user accounts and receive funds from multiple sources. The system (100) uses these funds to seed multiple holding accounts (122), (124) or (126) across multiple financial institutions (128), (130) and (132). The system (100) may also use algorithms within the software (146) to analyze the flow of funds through the system (100), using past data to anticipate future needs and deposit new funds accordingly.

[0030] The system (100) may also transfer funds between holding accounts (122), (124) or (126) to optimize the return on investment and to position the system (100) to handle anticipated future transactions more efficiently. Using infor-
ination from the system (100), the manager (102) may open new holding accounts in new financial institutions or close existing holding accounts in other financial institutions to take advantage of changing returns on investment, or to locate accounts within or closer to financial institutions with increasing transaction activity.

When the account holder (106) wishes to transfer funds to an associate (108), the account holder (106) provides the system (100) with transfer instructions. The account holder (106) may provide the manager (102) the transfer instructions via the client (156) or via a third-party device, such as a magnetic strip reader (226), check reader (228), parking meter (230), RFID reader (232) or another third-party device (234). Although the following describes the account holder (106) providing transfer instructions to the system (100) via the client (156) across the network (150), it will be understood by those of ordinary skill in the art, that the account holder (106) may provide the transfer instructions to the system (100) via any conventional or known financial transaction processing device or process.

When the account holder (106) wishes to transfer funds to an associate (108), such as a merchant, the account holder (106) connects via the client (156) to the server (134) via SSL. The server (134) returns the webpage (148), which the account holder (106) uses to enter security information, such as the username (172) and password (174) to access the account holder’s account information (236) stored on the user database (142) located on the server (134). The account holder (106) selects the transfer funds webpage (238) by clicking the transfer button (240) on the account webpage (180).

The account holder (106) enters fund transfer instructions (242) on the transfer funds webpage (238) (FIGS. 1, 2 and 7A). The transfer instructions (242) include predetermined information (244) such as the amount (246) of the fund transfer and the routing and account numbers (248) of the transfer account (250) that is to receive the funds. Additional instructions may include time information (252) indicating when the transfer is to be executed and any additional information the manager (102) requires. After the account holder (106) enters the fund transfer instructions (242) on the transfer funds webpage (238), the account holder (106) clicks the submit button (254), which sends (256) the fund transfer instructions (242) to the server (134) (FIGS. 1, 2, 6 and 7A). The system (100) collects (258) the predetermined information (244) at the server (134) and determines (260) whether the account holder’s account (176) contains sufficient available funds to execute the fund transfer instructions (242). If the account holder account (176) does not contain sufficient available funds to complete the transaction, the system (100) returns (262) an error message (264) to the account holder (106) in the form of an transfer error webpage (266), where the account holder is prompted to send (256) corrected transfer instructions (242) (FIGS. 1, 2, 6, 7A and 7B).

If the account holder account (176) does contain sufficient available funds to complete the transaction, the system (100) uses the collected predetermined information (244) to collect (268) additional predetermined information (270). As an example, the system (100) may use the routing number (248) to obtain the geographic location and routing subnet of a third-party financial institution (272) associated with the transfer account (250) from the financial institution database (144) located on the server (134). The system (100) may collect additional information from cached or “real-time” third-party providers, such as the ACH (184).

Using the predetermined information (244) and (270), the system (100) determines (274) the optimal holding account (122), (124) or (126) from which to transfer the funds. This determination may be based upon the amount of funds in the holding accounts (122), (124) or (126), which accounts are insured, which are under the FDIC and/or NCUA insurance limit and by what amounts, as well as which of the holding accounts (122), (124) or (126) offer the least return on investment. Once the system (100) dynamically determines (274) the optimal holding account (122), (124) or (126) from which to transfer the funds, the system (100) initiates (276) the transfer of funds to the financial institution (272) and associated transfer account (250).

In determining the optimal holding account from which to transfer the funds, the system (100) may weight all factors equally. Alternatively, the system (100) may employ algorithms contained within the system software (146) to determine the optimal holding account to receive the deposited funds. Preferably, the optimal holding account (122) to transfer the funds, as determined by the system (100) is located closest to the financial institution (272) and associated transfer account (250), to reduce the transfer time associated with the transfer and thereby reduce the time during which the funds are not available.

If the ACH system is used, the financial institution (128) associated with the optimal holding account (250) is the OFDI. The account holder (106) may initiate the authorization for the transaction through the system (100) to the OFDI via accounts receivable entry (ARC), point of purchase (POP), prearranged payments and deposits (PPD), telephone initiated-entry (TEL) or web-initiated entry (WEB) authorization. The OFDI then forwards the authorized request to an ACH operator, which passes it on the receiving depository financial institution (RDIF). In this case, the RDIF is the financial institution (272) and associated transfer account (250), which credits the transfer account (170) with the funds. The system (100) may also split the transfer, transferring funds from two or more holding accounts (122) and (124), to further optimize factors associated with the transfer, such as maintaining individual transfers under the FDIC and/or NCUA insured limit. Alternatively, the system (100) may transfer funds from one or more holding accounts (122) and (124) into another holding account (250) before making the transfer. The system (100) may also use “real-time” information relating to the holding accounts (122), (124) or (126), other transactions and the proposed routing of the transaction, to dynamically select the optimal holding account (124) from which to transfer the funds.

Although the invention has been described with respect to a preferred embodiment thereof, it is to be understood that it is not to be so limited since changes and modifications can be made therein which are within the full, intended scope of this invention as defined by the appended claims.

What is claimed is:

1. A method comprising:
   (a) providing an account holder account associated with an account holder;
   (b) providing an associate account associated with an associate;
   (c) transferring a predetermined amount of account holder funds from the account holder to the account holder account;
(d) crediting the account holder account an amount associated with the account holder funds;
(e) comingling the account holder funds with other funds to create a fund pool;
(f) depositing portions of the fund pool with a plurality of financial institutions;
(g) requesting a transfer of payment funds from the account holder to an associate associated with an associate financial institution;
(h) identifying a predetermined receiver characteristic associated with the receiving financial institution;
(i) selecting from the plurality of financial institutions a transfer financial institution having a predetermined transfer characteristic;
(j) authorizing a transfer of at least a portion of the payment funds from the transfer financial institution to the receiving financial institution;
(k) transferring at least a portion of the payment funds from the transfer financial institution to the associate financial institution;
(l) debiting the account holder account an amount associated with the transfer; and
(m) crediting the receiver account an amount associated with the transfer.

2. The method of claim 1, wherein the associate financial institution is a receiving depository financial institution.

3. The method of claim 2, wherein the transfer financial institution is an originating depository financial institution.

4. The method of claim 3, further comprising transferring the payment funds from the originating depository financial institution to the receiving depository financial institution through a financial clearinghouse.

5. The method of claim 4, wherein the financial clearinghouse is an automated clearinghouse.

6. The method of claim 5, wherein the predetermined receiver characteristic is a geographic location.

7. The method of claim 6, wherein the predetermined transfer characteristic is a geographic location.

8. The method of claim 5, wherein the predetermined transfer characteristic is a transfer time;

9. The method of claim 1, further comprising transferring the payment funds from the transfer financial institution to the receiving financial institution through a financial clearinghouse.

10. The method of claim 9, wherein the financial clearinghouse is an automated clearinghouse.

11. The method of claim 1, further comprising:
(a) selecting from the plurality of financial institutions a supplemental transfer financial institution having a third predetermined transfer characteristic;
(b) authorizing a supplemental transfer of a supplemental portion of payment funds from the supplemental transfer financial institution to the receiving financial institution; and
(c) transferring the supplemental portion of payment funds from the supplemental transfer financial institution to the receiving financial institution.

12. A method comprising:
(a) receiving account holder funds from an account holder;
(b) comingling the account holder funds with a third party funds to create a fund pool;
(c) dividing the fund pool into a plurality of fund groups;
(d) depositing the fund groups in a plurality of financial institutions;
(e) receiving a transfer request from the account holder to transfer an amount of the account holder funds to an associate;
(f) identifying a receiving financial institution associated with the receiver;
(g) selecting from the plurality of financial institutions a transfer financial institution having a predetermined transfer characteristic relating to the receiving financial institution; and
(h) transferring at least a portion of the amount of the account holder funds from the transfer financial institution to the receiving financial institution.

13. The method of claim 12, wherein the receiving financial institution is a receiving depository financial institution.

14. The method of claim 13, wherein the transfer financial institution is an originating depository financial institution.

15. The method of claim 14, further comprising transferring the payment funds from the originating depository financial institution to the receiving depository financial institution through a financial clearinghouse.

16. The method of claim 15, wherein the financial clearinghouse is an automated clearinghouse.

17. The method of claim 12, wherein said predetermined transfer characteristic is an estimate of the time involved in processing a transfer of at least a portion of the amount of the account holder funds from the transfer financial institution to the receiving financial institution.

18. A method comprising:
(a) receiving account holder funds from an account holder;
(b) depositing first funds into a first transfer financial institution located at a first location;
(c) depositing second funds into a second transfer financial institution located at a second location;
(d) receiving a transfer request from the account holder to transfer an amount of the account holder funds to a receiving financial institution;
(e) selecting a transfer financial institution from the first financial institution and the second financial institution, based upon proximity to the receiving financial institution; and
(f) transferring at least a portion of the amount of the account holder funds from the transfer financial institution to the receiving financial institution.

19. The method of claim 18, wherein the receiving financial institution is a receiving depository financial institution.

20. The method of claim 19, wherein the transfer financial institution is an originating depository financial institution.