ACQUIRERLESS TRANSACTION CARD PROCESSING SYSTEMS AND METHODS

Field of the Invention

[0001] The present invention relates generally to the field of transaction card processing, and more particularly to systems and methods for automated transaction card processing implemented without an acquirer function.

Background of the Invention

[0002] Traditionally, the use of credit cards as the source of funds for payments is limited to spends, such as shopping, dining, traveling and the like. However, there are many other expenses that are typically much larger and more important, such as rent, school fees, condominium fees, income taxes, insurance premiums and the like for which credit cards are generally not used as the source of funds for payment. Instead, these important spends are normally performed with a bank account as the source of funds using, for example, bank-to-bank transfers, paper checks, or online banking transfers.

[0003] These important payments typically do not have merchant accounts with merchant acquiring banks that enable the holders of such accounts to accept credit or debit card payments. Further, it is extremely unlikely that the recipients of such typically infrequent payments would be willing to pay the fees that banks charge merchants to act as merchant acquirers. Moreover it does not make economic sense for a bank to attempt to solicit individual entities for processing nothing more than infrequent payments such as rent, school fees, condominium fees, income taxes, insurance premiums and the like.

[0004] Consequently, credit cards are not generally used for such payments, and credit card customers are deprived of any opportunity to use their card account credit line for payment of what may likely be their largest and most basic expenses, for example, during a temporary cash flow shortage. Further, because customers are unable to use their credit cards for such payments, they are likewise denied reward points or airline miles and the like that are typically associated with credit card transaction activity.

[0005] There is a present need for systems and methods for automated transaction card processing implemented without an acquirer function that overcome the deficiencies of legacy systems. The problem solved by embodiments of the invention is rooted in the technical limitations of the legacy approaches, and improved technology is needed to address the problems of existing approaches.

[0006] Summary of the Invention

[0007] Embodiments of the invention advance technical fields for addressing problems associated with the above-described legacy processes as well as advancing peripheral technical fields. Such embodiments of the invention employ computer hardware and software, including, without limitation, one or more processors coupled to memory and non-transitory computer-readable storage media with one or more executable programs stored thereon which instruct the processors to perform the automated transaction card processing that is implemented without an acquirer function as described herein.

[0008] Embodiments of the invention are directed to technological solutions that may involve automated systems that may employ, for example, an enrollment function of one or more processors of a backend server that receives customer data consisting at least in part of designations of a transaction card source account of the customer, a non-acquirer account of a recipient, a payment amount, and a scheduled payment date; an automated bill pay function of the one or more processors of the backend server that debits the payment amount from the transaction card source account and credits the debited payment amount to one or more non-acquirer bridging accounts on a payment initiation date that is a predetermined number of days in advance of the scheduled payment date; and the automated bill pay function of the one or more processors of the backend server that thereafter debits the credited payment amount from the one or more non-acquirer bridging accounts and transfers the payment amount via a non-card association channel to the non-acquirer recipient account after the payment initiation date and on or before the scheduled payment date.

[0009] Other aspects of embodiments of the invention may include, for example, the enrollment function of the one or more processors of the backend server that receives the customer data via one of a website or a mobile application. Still other aspects may include, for example, the enrollment function of the one or more processors of the backend server that performs a database screening check of the customer and the recipient against a predetermined list of entities with whom transactions may be prohibited. Additional aspects may include, for example, the automated bill pay function of the one or more processors of the backend server that triggers an authorization request to an authorization function of the one or more processors of the backend server on the payment initiation date.

[0010] Further aspects of embodiments of the invention may include, for example, the authorization function of the one or more processors of the backend server that performs checks consisting at least in part of an availability of credit and absence of delinquency for the transaction card source account. Still further aspects may include, for example, the authorization function of the one or more processors of the backend server that performs checks consisting at least in part of velocity checks. It is to be understood that such velocity checks may include, for example and without limitation, checks for a maximum allowed number of transactions per month for the transaction card source account, a maximum number of transactions per month to the same recipient, and a maximum allowed value of transactions per month to the same recipient for the transaction card source account.

[0011] Additional aspects of embodiments of the invention may include, for example, the automated bill pay function of the one or more processors of the backend server that debits the payment amount from the one or more non-acquirer bridging accounts based on a successful authorization response from an authorization function of the one or more processors of the backend server to an authorization request. Other aspects may include, for example, the automated bill pay function of the one or more processors of the backend server that posts the debited payment amount to the transaction card account based on the successful authorization response.

[0012] Still further aspects of embodiments of the invention may include, for example, the automated bill pay function of the one or more processors of the backend server that credits the payment amount to an intrabank ledger account. Other aspects may include, for example, the automated bill pay function of the one or more processors of the backend server that transfers the payment amount via a non-card association channel comprising an interbank transfer system processor. Additional aspects may include, for example, the automated bill pay function of the one or more processors of the backend server that transfers the payment amount via a non-card association channel comprising an interbank transfer system processor employing a domestic fund transfer network transfer protocol.

[0013] Still other aspects of embodiments of the invention may include, for example, the automated bill pay function of the one or more processors of the backend server that transfers the payment amount via a non-card association channel comprising an interbank transfer system processor employing a General Interbank Recurring Order (GIRO) domestic fund transfer network transfer protocol. Still further aspects of embodiments of the invention may include, for example, the automated bill pay function of the one or more processors of the backend server that transfers the payment amount via a non-card association channel comprising an interbank transfer system processor employing a Financial Information eXchange (FIX) adapted for streaming (FAST) domestic fund transfer network transfer protocol.

[0014] Embodiments of the invention may also provide methods involving, for example, receiving, by an enrollment function of one or more processors of a backend server, customer data consisting at least in part of designations of a transaction card source account, a non-acquirer recipient account, a payment amount, and a scheduled payment date; debiting, by an automated bill pay function of one or more processors of the backend server, the payment amount from the transaction card source account and crediting, by the automated bill pay function of the one or more processors of the backend server, the debited payment amount to one or more non-acquirer bridging accounts on a payment initiation date that is a predetermined number of days in advance of the scheduled payment date; and thereafter debiting, by the automated bill pay function

of the one or more processors of the backend server, the payment amount from the one or more non-acquirer bridging accounts and transferring, by the automated bill pay function of the one or more processors of the backend server, the payment amount via a non-card association channel to the non-acquirer recipient account on or before the scheduled payment date.

[0015] In other aspects of the method for embodiments of the invention, receiving the customer data may involve, for example, receiving, by the enrollment function of the one or more processors of the backend server, the customer data via one of a website or a mobile application. Still further aspects may involve, for example, performing, by the enrollment function of the one or more processors of the backend server a database screening check of the customer and the recipient against a predetermined list of entities with whom transactions may be prohibited. Additional aspects may involve, for example, triggering, by the automated bill pay function of the one or more processors of the backend server, an authorization request to an authorization function of the one or more processors of the backend server on the payment initiation date.

[0016] In additional aspects of embodiments of the invention, debiting the payment amount from the one or more non-acquirer bridging accounts may involve, for example, debiting, by the automated bill pay function of the one or more processors of the backend server, the payment amount from the one or more non-acquirer bridging accounts based on a successful authorization response from the authorization function of the one or more processors of the backend server to the authorization request. In other aspects, transferring the payment amount via a non-card association channel may involve, for example, transferring the payment amount via an intrabank ledger account. In still other aspects, transferring the payment amount via a non-card association channel may involve, for example, transferring the payment amount via an interbank transfer system processor.

[0017] These and other aspects of the invention will be set forth in part in the description which follows and in part will become more apparent to those skilled in the art upon examination of the following or may be learned from practice of the invention. It is intended that all such aspects are to be included within this description, are to be

within the scope of the present invention, and are to be protected by the accompanying claims.

[0018] Brief Description of the Drawings

[0019] Fig. 1A is a sample screenshot that illustrates an example of a landing page for embodiments of the invention;

[0020] Fig. 1B is a sample screenshot that illustrates an example of a setup page for embodiments of the invention;

[0021] Fig. 1C is a sample screenshot that illustrates an example of a recurring payment set-up page for embodiments of the invention;

[0022] Fig. 1D is a sample screenshot that illustrates an example of a credit card account payment selection page for embodiments of the invention;

[0023] Fig. 2A is a sample screenshot that illustrates an example of a review and confirmation page for embodiments of the invention;

[0024] Fig. 2B is a sample screenshot that illustrates an example of a one-time password validation page for embodiments of the invention;

[0025] Fig. 2C is a sample screenshot that illustrates an example of a payment set-up success page for embodiments of the invention;

[0026] Fig. 2D is a sample screenshot that illustrates an example of a reconfirmation for recurring set-up page for embodiments of the invention;

[0027] Fig. 2E is a sample screenshot that illustrates an example of a recurring set-up success page for embodiments of the invention;

[0028] Fig. 3 is a schematic diagram that illustrates an example of components and flow of information between components for embodiments of the invention; and

[0029] Fig. 4 is a schematic diagram that illustrates an example of the process for embodiments of the invention.

Detailed Description

[0030] Reference will now be made in detail to embodiments of the invention, one or more examples of which are illustrated in the accompanying drawings. Each example is provided by way of explanation of the invention, not as a limitation of the invention. It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the scope or spirit of the invention. For example, features illustrated or described as part of one embodiment can be used in another embodiment to yield a still further embodiment. Thus, it is intended that the present invention cover such modifications and variations that come within the scope of the invention.

[0031] Embodiments of the invention provide systems and methods in which credit cards may be used as the source of funds for payments, such as rent, school fees, condominium fees, income taxes, insurance premiums and the like for which credit cards are not generally used as the source of funds for payment. Such payments may be one-time in nature or recurring, for example, on a monthly basis and may be processed without requiring an acquirer function. In order to accomplish this, embodiments of the invention may leverage existing domestic interbank fund transfer processes, such as General Interbank Recurring Order (GIRO) and / or Faster Payments Services to enable a customer to access credit, if required, for such payments and at the same time to earn credit card account rewards, such as reward points, airline miles, and/or cash back rewards.

[0032] Access to embodiments of the invention may be limited to a select segment of financial institution credit card customers based, for example, on parameters, such as profitability, risk profile, customer behavior, and the like, as determined exclusively by the financial institution. As noted, embodiments of the invention may focus, for example, on recurring or one-time payments to individuals and / or institutions, for

example, for house rent, condo management fees, school fees, tuition fees, enrichment fees, taxes such as income and / or property taxes, and insurance fees

[0033] Channels via which such embodiments may be initiated may include, for example, targeted email, Short Message Service (SMS) messaging, and mobile app messaging or any other suitable communication channel. Select credit card customers of a financial institution may expect to pay a fee per transaction in order to make payments via embodiments of the invention. Such customers may make and /or schedule such payments, for example, via weblink on email and / or SMS by booking on a customized web form after one-time-password validation without logging into a mobile app of the financial institution or via logging in to the financial institution's mobile app with validated credentials.

[0034] In order to make and /or schedule such one-time or recurring payments, the customer may be required to input or select beneficiary and bank details along with remarks. According to embodiments of the invention, such one time or recurring payments may be arranged by a customer simply by selecting the customer's preferred credit card as the source of funds, entering or selecting recipient details, and authenticating to the system. This process for embodiments of the invention is transparent from a recipient's perspective with only a change in the source of funds from the payer's perspective. From a perspective of a recipient, such as a landlord, school, or tax authority, the manner in which a payment is received may not change, but technology for embodiments of the invention may change the source of funds for a payment from the customer's bank account to the customer's credit card account.

[0035] Assume, for example, that the recipient is a landlord and the payment is a rental payment. It makes little economic sense for a financial institution to attempt to acquire and process credit card transactions on behalf of millions of individual landlords in a particular country. Thus, as noted, a landlord is not a merchant with a merchant acquirer account, and there is no acquiring event by which a merchant acquirer can process a credit card payment on behalf of the landlord. While the specific example may relate to a landlord, the same is true with respect, for example, to numerous other entities

such as schools or tax authorities. In embodiments of the invention, a customer who needs to make a rental payment to a landlord may enroll, for example, to make monthly credit card rental payments, such as $500 per month, to the landlord.

[0036] In embodiments of the invention, a financial institution may debit the customer's credit card for the amount of the monthly rental, such as $500, every month at a time before the due date of the rent payment. For example, the customer's credit card account may be debited for the $500 rental payment in a batch process a predetermined number of days before the payment due date. Thereafter, the funds may be moved via a series of general ledger accounts from the customer's credit card account to a fund transfer general ledger account coupled, for example, to a domestic interbank network, such as the GIRO network, for transfer to the recipient's bank account. The system for embodiments of the invention may accomplish the foregoing, for example, by creating a dummy merchant so that the customer's credit card payment to the landlord may be effected as an actual credit card transaction without involving a merchant acquirer.

[0037] Assume, for example, that the recurring payment due date is the 26th of each month. The system for embodiments of the invention may debit the customer's credit card account for the scheduled payment on the 22nd, four days in advance of the payment due date. It is to be understood that such a period is an example only and that the period may be any predetermined length of time sufficient to assure that the scheduled payment is timely. Such debit may be performed by the system for embodiments of the invention after first confirming that certain parameters are met, such as the customer's credit card account is in good standing, is not locked or delinquent, and has a sufficient credit line for the payment. Such parameters may be the same as or similar to parameters for any other credit card transaction.

[0038] Upon confirming that the parameters are met, a system for embodiments of the invention may charge the customer's credit card account and post the charge as a credit card payment made to the landlord. Thereafter, such as on the 25th or the evening of the 24th, the system for embodiments of the invention may move the amount previously debited from the customer's credit card account, for example, to a bridging ledger or fund

transfer account that may be linked to a fund transfer network, such as the GIRO interbank network. The system for embodiments of the invention may then move the debited amount from the bridging ledger account via the fund transfer network to a pre-designated bank account of the recipient. From the perspective of the recipient, the debited amount arrives and is credited to the bank account of the recipient in the same way in which a fund transfer from another bank account may be credited. When credited to the recipient's account, the system for embodiments of the invention may send an alert to the customer notifying the customer that the fund transfer was successful and that the recipient has received the payment.

[0039] The system for embodiments of the invention may perform a customer's payment to a recipient such as a landlord as a credit card purchase transaction without an acquirer event by leveraging a domestic interbank network to perform the transfer of funds to the recipient at no cost to the recipient. While the recipient may pay nothing, the customer may be charged a nominal fee for the transaction, which may vary from customer to customer. For example, a customer who has a propensity to revolve the customer credit card account balance may be more profitable and may be charged little or no amount for the transaction. On the other hand, a customer who uses the customer's credit card solely to make such payments and receive reward points may be charged a higher fee.

[0040] Generally, from such customer's perspective, such fee may not significantly diminish the benefit of the relatively large number of reward points that may be awarded in connection with the customer's payment of a typically larger-than-usual sum, such as a rent payment, as a credit card purchase transaction. On the other hand, from the perspective of a card-issuing bank, once a customer becomes accustomed to using the customer's credit card account for payment of essential expenses, such as rent, school and taxes, the customer may develop a certain level of account stickiness over time. Another customer benefit of the system for embodiments of the invention is inclusion of all of the customer's monthly expenses, such as monthly rent and the like, in a single statement for the customer's credit card account.

[0041] A customer who makes monthly payments, such as rent, may receive an invitation, for example, via email or SMS message, to employ the system for embodiments of the invention in making such payments. Such an invitation may explain the number of reward points that may be awarded in connection with each payment via the system for embodiments of the invention and may further explain the rapid accumulation of such reward points over a relatively brief period of time. The email or SMS message may contain a link to a microsite via which the customer may sign up to use the system for embodiments of the invention by clicking on the link. A customer who clicks on the link may be prompted to provide certain information regarding the customer and the customer's credit card account and one or more payment recipients, amounts, and payment dates via the microsite. It is to be understood that the invitation may be presented, and the customer may enroll, via any other suitable method, such as via a mobile app. Thereafter, the system for embodiments of the invention may automatically perform the payments on the requested payment dates.

[0042] It is to be understood that the system for embodiments of the invention does not employ the processing of a transaction processing network of a card association, such as a MASTERCARD or VISA card transaction processing network. Instead, the fund transfer on behalf of the customer may be performed by the system for embodiments of the invention through an automated clearinghouse or domestic interbank network, such GIRO. It is to be further understood that such fund transfer may be performed via the domestic interbank network corresponding to a particular market, such as Singapore or Hong Kong, in which the accounts of the customer and recipient are both located.

[0043] As noted, aspects of the system for embodiments of the invention may include, for example, a customer registration process. In the registration process for embodiments of the invention, payment details, such as school fee and rent-related details may be captured in a landing page via a financial institution online pre-login channel, and enrollment may be performed in an advanced bill payment system (ABPS) backend host. It is to be understood that embodiments of the invention may also include a post login setup process with a succession of post login setup pages substantially the same as the pre-login setup process for embodiments of the invention. Accordingly, references

herein to "pre-login" in describing the pre-login setup process may be interpreted as "post login" to similarly describe the post login setup process for embodiments of the invention. Based on successful customer input in the pre-login screen, for example, the ABPS host may receive an enrollment handoff request for school fees or rent via the financial institution online pre-login channel.

[0044] In embodiments of the invention, for example, an online pre-login channel screen for a one-time payment or recurring payments may include customer registration fields. A service to capture the registration field details for the system for embodiments of the invention may require the various input fields from the financial institution online front end for enrollment for school fees and/or rent payments at the ABPS backend host. Such fields may relate, for example, to identification and banking details of a customer, identification and banking details for one or more recipients, and enrollment and one-time and/or recurring payment details for the customer. The ABPS backend host may send a response message, such as a successful registration message that may include a registration reference number to display for a successful registration to the front end online channel. After the customer completes the enrollment process in the system for embodiments of the invention, an enrollment status for the customer may be "active".

[0045] Further aspects of the system for embodiments of the invention may include, for example, setup of "dummy merchant" parameters for processing fund transfers, such as school fees and rent payments. The system for embodiments of the invention may introduce a new merchant option designated, for example, as merchant type "A" that may trigger a registration related to the system. In addition, various new "merchants", such as recipients of school fees and rent, may be defined for respective payment types under the new merchant type "A". It is to be understood that this new merchant type is in addition to regular merchant types included in a merchant system, such as ABPS, and are set up as "dummy" merchants (i.e., recipients without acquirer accounts) in the merchant system exclusively for processing only in the system for embodiments of the invention.

[0046] Additional aspects of the system for embodiments of the invention may involve, for example, initiating one-time or recurring fund transfers for customers who

have registered for the system based on a due day of the month as selected by each customer. In such aspect, the system for embodiments of the invention may scan customer registrations of the new "dummy" merchant type "A" on every processing day. If the due date of the processing month minus a predetermined number of days, such as four days, is equal to the current processing date, the system may then initiate a fund transfer request in a batch.

[0047] In the event the due date of the processing month minus the predetermined number of days falls on a holiday, the system for embodiments of the invention may initiate the fund transfers on the processing day falling prior to the computed date. Further, if the customer's selected date for a recurring payment falls on a date that is beyond a month-end date, such as the 29th day of the month which may fall beyond the end of February, the fund transfer process may be initiated on the day that is the end of the particular month minus four days, such as the 24th of day of February. Similarly, if the customer's selected date for a recurring payment falls on the 31st day of the month, which is beyond the month-end dates of September, April, June and November, the fund transfer may be initiated on the day that is the end of those particular months minus four days, such as the 26th day of each of those months.

[0048] In embodiments of the invention, fund transfers may be initiated from the backend host and sent to recipient accounts from bridging accounts in a process that may require a maximum of four days, including holidays and Sundays, before crediting to a recipient account. Thus, the host system may initiate the fund transfers four day before the due date as selected by customers so that the funds may be credited on or before the due date as selected by each customer. It is to be understood that such four-day period of time is only an example and that such fund transfers according to embodiments of the invention may be initiated any other suitable period of time before the selected due date.

[0049] The system for embodiments of the invention may perform authorization and velocity checks for customer payments each month for recurring payments but only once for one-time payments. The authorization request for a fund transfer amount on a customer's credit card account may be similar to a regular retail merchant authorization in

which a customer has authorized recurring payments to the retail merchant. In addition, velocity checks and/or threshold checks may be performed, for example, by an Advanced Fraud Early Warning System (AFEWS) or ABPS. Following a successful check by the AFEWS or ABPS function, the system for embodiments may update the fund transfer details in a transaction history and initiate an online alert to the customer with details of the fund transfer and the debit from the customer's credit card account. Otherwise, in the event of an AFEWS or ABPS check failure, the system may update the fund transfer details in the transaction history as a rejected transaction along with the reason for rejection and initiate an online alert to the customer.

[0050] After processing a successful authorized fund transfer request, the system for embodiments of the invention may create transaction details for the fund transfer, such as a fund transfer amount, a fee amount, if any, and an acquirer reference number. The customer's registration reference number may be used as the acquirer reference number, and the transaction details may be sent to the EMBS, which may recognize the acquirer reference number as a "dummy" merchant and will not perform any further processing. In the event of a failure of a fund transfer request, a reverse feed file may be processed for the rejected transaction. A reverse-feed file may be generated, for example, for failure of a prohibited entities database check or account credit failure, whereupon a transaction reversal may be created for the amount of the fund transfer and any fee amount. In addition, the status of the transaction in the payment history may be updated as rejected with details such as prohibited entities check failure or account credit failure.

[0051] Figs. 1A-1D depict a series of example screen shots of a succession of pages for a setup process for embodiments of the invention. Fig. 1A illustrates an example of a landing page 100 for embodiments of the invention to which a customer may be transferred after clicking on a microlink embedded, for example, in an electronic mail or SMS message. Fig. 1B illustrates an example of a setup page 102 for embodiments of the invention for a one-time credit card account payment to an entity without a merchant acquirer function. Referring to Fig. 1B, in order to set up a one-time payment, the customer may be prompted for entry of payment details 104 on fields for customer entry of payment amount 106, recipient details 108, and payment date 110. Referring further

to Fig. 1B, the customer may also be prompted for entry of a selection to make the payment recurrent 112.

[0052] Fig. 1C illustrates an example of a recurring payment page 114 for embodiments of the invention for setting up recurring credit card account payments to the entity without a merchant acquirer function. Referring to Fig. 1C, the customer may likewise be prompted for entry of payment details 116 on fields for customer entry of payment amount 118, recipient details 120, and payment date 122. Fig. 1D illustrates an example of a credit card account payment selection page 124 for embodiments of the invention for selection by the customer of a particular credit card account 126 or 128 for use in funding the one-time payment or recurring payments.

[0053] Figs. 2A-2E depict a series of example screen shots of a succession of pages for a payment setup confirmation process for embodiments of the invention. Fig. 2A illustrates an example of a review and confirmation page 202 for embodiments of the invention for reviewing and confirming 204 a customer's setup of a one-time or recurring credit card payment to an entity without a merchant acquirer function. Fig. 2B is an example of a one-time password validation page 206 for embodiments of the invention with a field 208 for entry of a one-time password sent to the customer's mobile communication device. Fig. 2C is an example of a payment set-up success page 210 for embodiments of the invention with an option 212 to set up a recurring payment if not already set up. Fig. 2D is an example of a reconfirmation for a recurring set-up page 214 for embodiments of the invention, and Fig. 2E is an example of a recurring set-up success page 216 for embodiments of the invention.

[0054] As previously noted, embodiments of the invention may also include a post login setup process with a succession of post login setup pages substantially the same as the above-described pre login setup process via a financial institution mobile application in which customer authentication may be performed via a suitable security token, such as a DIGIPASS PIN. Thus, the post login setup process for embodiments of the invention may employ, for example, a setup page, a recurring payment set-up page, a credit card account payment selection page, a review and confirmation page, a payment set-up

success page, a recurring set-up page substantially similar to the pre-login process for embodiments of the invention.

[0055] Fig. 3 is a schematic diagram that illustrates an example of components and flow of information between components for embodiments of the invention. Referring to Fig. 3, at 302, a customer may be enrolled by the system for embodiments of the invention via an online channel such as a website or via a mobile channel hosted, for example, by a server, such as a UNIX server. For example, the customer may log on using the customer's credentials, such as a user ID or card number and a password.

[0056] Referring further to Fig. 3, at 304, a backend server in communication with the host server may perform checks prohibited entities or limits. In performing the prohibited entities or limit check, the backend server may pull information about the customer and/or a recipient entered by the customer and may make a call to an prohibited entities database to verify whether a match is found to the customer and/or the customer-provided recipient information in the prohibited entities database. If a match is found, the transaction may be rejected. However, if no match is found, the process may proceed to complete an enrollment of the customer.

[0057] Referring again to Fig. 3, at 306, an automated bill pay system (APBS) executing on the host server may trigger an authorization to an enhanced authorization system (EAS) also executing on the host server on a date that is a predetermined number of days in advance of a scheduled payment. During the authorization process, the system for embodiments of the invention may perform fraud and credit limit checks, as well as other account checks. Once an authorization process is successful, the amount of a payment may be debited from the customer's credit card account, and at 308, based on the successful authorization, the transaction may be posted to the credit card account of the customer as a debit transaction

[0058] It is to be noted that certain screenings may be performed both at the time of setting up a recipient and at the time at which funds are actually transferred. For example, the status of a customer's credit card account may be checked for delinquency and available credit line ("OTB" or "open-to-buy"). For another example, velocity

checks, such as checks for a maximum allowed number of transactions per month per card, a maximum number of transactions per month to the same recipient, and a maximum allowed value of transactions per month per card to the same recipient may be performed.

[0059] Referring once again to Fig. 3, once the customer's credit card account is debited, at 310, funds for the payment to the designated recipient may be moved to a bridging account general ledger on the host mainframe server. Thereafter, at 312, the funds may be passed from the bridging account general ledger through a fund transfer (FT) system for an interbank transfer or through an intrabank ledger such as Impacs general ledger if the recipient is an account holder within the same financial institution as the customer. In the case of an intrabank transfer, the funds may be transferred directly between accounts within the same financial institution without involving an interbank network transfer.

[0060] However, if the recipient's account is outside the financial institution, the funds may be transferred, at 314, by the host server through the FT system that may use an existing domestic fund transfer network transfer protocol, such as GIRO or Financial Information eXchange (FIX) adapted for streaming (FAST) to credit the funds to the recipient's bank account, at 316. In the system for embodiments of the invention, the funds may be transferred in a night batch after the fund transfer network finishes its processing to the recipient's bank. Once the recipient bank processes the fund transmittal to the recipient, the funds may be posted to the recipient's bank account.

[0061] As previously noted, it is to be understood that the system for embodiments of the invention may perform a customer's payment to a recipient such as a landlord as a credit card purchase transaction without an acquirer event by leveraging a domestic interbank network to perform the transfer of funds to the recipient at no cost to the recipient. The system for embodiments of the invention may accomplish this, for example, by creating a dummy merchant so that the customer's credit card payment to the landlord may be effected as an actual credit card transaction via a non-card

association channel, such as through one or more non-acquirer bridging accounts without involving a merchant acquirer.

[0062] Fig. 4 is a schematic diagram that illustrates an example of the process for embodiments of the invention. Referring to Fig. 4, at 4001 an enrollment function of one or more processors of a backend server receives customer data consisting at least in part of designations of a transaction card source account of the customer, a non-acquirer account of a recipient, a payment amount, and a scheduled payment date. At 4002, an automated bill pay function of the one or more processors of the backend server debits the payment amount from the transaction card source account and credits the debited payment amount to one or more non-acquirer bridging accounts on a date preceding the scheduled payment date by a predetermined number of days, which may be referred to as the payment initiation date. At 4003, the automated bill pay function of the one or more processors of the backend server thereafter debits the credited payment amount from the one or more non-acquirer bridging accounts and transfers the payment amount via a non-card association channel to the non-acquirer recipient account on or before the scheduled payment date.

[0063] The descriptions of the various embodiments of the present invention have been presented for purposes of illustration, but are not intended to be exhaustive or limited to the embodiments disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the described embodiments. The terminology used herein was chosen to best explain the principles of the embodiments, the practical application or technical improvement over technologies found in the marketplace, or to enable others of ordinary skill in the art to understand the embodiments disclosed herein. The present invention may be a system, a method, and/or a computer program product at any possible technical detail level of integration. The computer program product may include a computer readable storage medium (or media) having computer readable program instructions thereon for causing a processor to carry out aspects of the present invention.

[0064] It is to be understood that embodiments of the invention may be implemented as processes of a computer program product, each process of which is operable on one or more processors either alone on a single physical platform or across a plurality of platforms, such as a system or network, including networks such as the Internet, an intranet, a WAN, a LAN, a cellular network, or any other suitable network. Embodiments of the invention may employ client devices that may each comprise a computer-readable medium, including but not limited to, random access memory (RAM) coupled to a processor. The processor may execute computer-executable program instructions stored in memory. Such processors may include, but are not limited to, a microprocessor, an application specific integrated circuit (ASIC), and or state machines. Such processors may comprise, or may be in communication with, media, such as computer-readable media, which stores instructions that, when executed by the processor, cause the processor to perform one or more of the steps described herein.

[0065] It is also to be understood that such computer-readable media may include, but are not limited to, electronic, optical, magnetic, RFID, or other storage or transmission device capable of providing a processor with computer-readable instructions. Other examples of suitable media include, but are not limited to, CD-ROM, DVD, magnetic disk, memory chip, ROM, RAM, ASIC, a configured processor, optical media, magnetic media, or any other suitable medium from which a computer processor can read instructions. Embodiments of the invention may employ other forms of such computer-readable media to transmit or carry instructions to a computer, including a router, private or public network, or other transmission device or channel, both wired or wireless. Such instructions may comprise code from any suitable computer programming language including, without limitation, C, C++, C#, Visual Basic, Java, Python, Perl, and JavaScript.

[0066] It is to be further understood that client devices that may be employed by embodiments of the invention may also comprise a number of external or internal devices, such as a mouse, a CD-ROM, DVD, keyboard, display, or other input or output devices. In general such client devices may be any suitable type of processor-based platform that is connected to a network and that interacts with one or more application

programs and may operate on any suitable operating system. Server devices may also be coupled to the network and, similarly to client devices, such server devices may comprise a processor coupled to a computer-readable medium, such as a random access memory (RAM). Such server devices, which may be a single computer system, may also be implemented as a network of computer processors. Examples of such server devices are servers, mainframe computers, networked computers, a processor-based device, and similar types of systems and devices.

[0067] Aspects of the present invention may be described herein with reference to flowchart illustrations and/or block diagrams of methods, apparatus (systems), and computer program products according to embodiments of the invention. It will be understood that each block of such flowchart illustrations and/or block diagrams, and combinations of blocks in the flowchart illustrations and/or block diagrams, may be implemented by computer readable program instructions. These computer readable program instructions may be provided to a processor of a special purpose computer or other programmable data processing apparatus to produce a machine, such that the instructions, which execute via the processor of the computer or other programmable data processing apparatus, create means for implementing the functions/acts specified in the flowchart and/or block diagram block or blocks.

[0068] These computer readable program instructions may also be stored in a computer readable storage medium that can direct a computer, a programmable data processing apparatus, and/or other devices to function in a particular manner, such that the computer readable storage medium having instructions stored therein comprises an article of manufacture including instructions which implement aspects of the function/act specified in the flowchart and/or block diagram block or blocks. The computer readable program instructions may also be loaded onto a computer, other programmable data processing apparatus, or other device to cause a series of operational steps to be performed on the computer, other programmable apparatus or other device to produce a computer-implemented process, such that the instructions which execute on the computer, other programmable apparatus, or other device implement the functions/acts specified in the flowchart and/or block diagram block or blocks.

[0069] The flowchart and block diagrams in the Figures may illustrate the architecture, functionality, and operation of possible implementations of systems, methods, and computer program products according to various embodiments of the present invention. In this regard, each block in the flowchart or block diagrams may represent a module, segment, or portion of instructions, which comprises one or more executable instructions for implementing the specified logical function(s). In some alternative implementations, the functions noted in the blocks may occur out of the order noted in the Figures. For example, two blocks shown in succession may, in fact, be executed substantially concurrently, or the blocks may sometimes be executed in the reverse order, depending upon the functionality involved. It will also be noted that each block of the block diagrams and/or flowchart illustration, and combinations of blocks in the block diagrams and/or flowchart illustration, can be implemented by special purpose hardware-based systems that perform the specified functions or acts or carry out combinations of special purpose hardware and computer instructions.

What is claimed is:

1. A transaction card processing system of a financial institution comprising:

an automated bill pay function of one or more processors of a backend server of the financial institution that debits a payment amount from a transaction card source account of a customer and credits the debited payment amount to one or more non-acquirer bridging accounts on a payment initiation date that is a predetermined number of days in advance of a scheduled payment date; and

the automated bill pay function of the one or more processors of the backend server that debits the credited payment amount from the one or more non-acquirer bridging accounts and transfers the payment amount to a non-acquirer account of a recipient by crediting to an intrabank ledger account after the payment initiation date and on or before the scheduled payment date.

2. The transaction card processing system of claim 1, wherein the automated bill pay function of the one or more processors of the backend server that debits the credited payment amount from the one or more non-acquirer bridging accounts and transfers the payment amount to a non-acquirer recipient account via a non-card association channel comprising an interbank transfer system processor after the payment initiation date and on or before the scheduled payment date.

3. The transaction card processing system of claim 1 or 2, further comprising:

an enrollment function of the one or more processors of the backend server that receives customer data consisting at least in part of designations of the transaction card source account of the customer, the non-acquirer account of the recipient, the payment amount, and the scheduled payment date.

4. The transaction card processing system of claim 3, further comprising the enrollment function of the one or more processors of the backend server that receives the customer data via one of a website or a mobile application.

5. The transaction card processing system of claim 3, further comprising the enrollment function of the one or more processors of the backend server that performs a database screening check of the customer and the recipient against a predetermined list of entities with whom transactions are prohibited.

6. The transaction card processing system of any one of claims 1 to 5, further comprising the automated bill pay function of the one or more processors of the backend server that triggers an authorization request to an authorization function of the one or more processors of the backend server on the payment initiation date.

7. The transaction card processing system of claim 6, further comprising the authorization function of the one or more processors of the backend server that performs checks consisting at least in part of an availability of credit and absence of delinquency for the transaction card source account.

8. The transaction card processing system of claim 6, further comprising the authorization function of the one or more processors of the backend server that performs checks consisting at least in part of velocity checks.

9. The transaction card processing system of any one of claims 1 to 5, further comprising the automated bill pay function of the one or more processors of the backend server that debits the payment amount from the one or more non-acquirer bridging accounts based on a successful authorization response from an authorization function of the one or more processors of the backend server to an authorization request.

10. The transaction card processing system of claim 9, further comprising the automated bill pay function of the one or more processors of the backend server that posts the debited

payment amount to the transaction card source account based on the successful authorization response.

11. The transaction card processing system of claim 2, further comprising the automated bill pay function of the one or more processors of the backend server that transfers the payment amount via a non-card association channel comprising an interbank transfer system processor employing a domestic fund transfer network transfer protocol.

12. The transaction card processing system of claim 11, further comprising the automated bill pay function of the one or more processors of the backend server that transfers the payment amount via a non-card association channel comprising an interbank transfer system processor employing a General Interbank Recurring Order (GIRO) domestic fund transfer network transfer protocol.

13. The transaction card processing system of claim 11, further comprising the automated bill pay function of the one or more processors of the backend server that transfers the payment amount via a non-card association channel comprising an interbank transfer system processor employing a Financial Information eXchange (FIX) adapted for streaming (FAST) domestic fund transfer network transfer protocol.

14. A method for transaction card processing by a financial institution comprising:

debiting, by an automated bill pay function of one or more processors of a backend server of the financial institution, a payment amount from a transaction card source account of a customer and crediting, by the automated bill pay function of the one or more processors of the backend server, the debited payment amount to one or more non-acquirer bridging accounts on a payment initiation date that is a predetermined number of days in advance of a scheduled payment date; and

thereafter debiting, by the automated bill pay function of the one or more processors of the backend server, the payment amount from the one or more non-acquirer bridging accounts and transferring, by the automated bill pay function of the one or more processors of the backend

server, the payment amount to a non-acquirer account of a recipient by crediting to an intrabank ledger account after the payment initiation date and on or before the scheduled payment date.

15. The method of claim 14, wherein

thereafter debiting, by the automated bill pay function of the one or more processors of the backend server, the payment amount from the one or more non-acquirer bridging accounts and transferring, by the automated bill pay function of the one or more processors of the backend server, the payment amount to a non-acquirer account of a recipient via a non-card association channel comprising an interbank transfer system processor after the payment initiation date and on or before the scheduled payment date.

16. The method of claim 14 or 15, further comprising:

receiving, by an enrollment function of the one or more processors of the backend server, customer data consisting at least in part of designations of the transaction card source account, the non-acquirer account, the payment amount, and the scheduled payment date.

17. The method of claim 16, wherein receiving the customer data further comprises receiving, by the enrollment function of the one or more processors of the backend server, the customer data via one of a website or a mobile application.

18. The method of any one of claim 16, further comprising performing, by the enrollment function of the one or more processors of the backend server, a database screening check of the customer and the recipient against a predetermined list of entities with whom transactions are prohibited.

19. The method of any one of claims 14 to 18, further comprising triggering, by the automated bill pay function of the one or more processors of the backend server, an authorization request to an authorization function of the one or more processors of the backend server on the payment initiation date.

20. The method of claim 19, wherein debiting the payment amount from the one or more non-acquirer bridging accounts further comprises debiting, by the automated bill pay function of the one or more processors of the backend server, the payment amount from the one or more non-acquirer bridging accounts based on a successful authorization response from the authorization function of the one or more processors of the backend server to the authorization request.