A METHOD AND AN APPARATUS FOR COMPLETING A LIMITED-TIME DELAYED ELECTRONIC TRANSACTION

TECHNICAL FIELD

[0001] The present disclosure relates to a method and an apparatus for completing a limited-time delayed electronic transaction.

BACKGROUND

[0002] Post-dated transactions provide flexibility for a payer to (i) initiate a transaction without having a transaction amount to be present in the payer's account and (ii) make payment for the transaction within a stipulated period of time. For example, credit cards or charge cards may be used for such transactions. However, there are several limitations of credit cards, such as a high interest rate, difficulty for some individuals to be issued cards, and a credit limit. Other post-dated transaction vehicles, such as traditional cheques, exist but they too have their restrictions. For example, post-dated cheques are usually in paper form which may be misplaced, and they take up unnecessary manpower and resources which otherwise can be saved if they are in electronic form.

[0003] With the proliferation of the Internet, more and more people are using e-commerce to conduct transactions. Conducting transactions over the Internet has the advantage of convenience, lower costs and mass market reach for both merchants and clients. It is thus desirable to confer the advantages of post-dated transactions on internet–based transactions. Credit card transactions are convenient, but may have disadvantages as mentioned previously. Although electronic cheques exist, they are typically digitized versions of physical cheques and thus are not convenient for payer or payee.

[0004] In view of the above, it would be desirable to provide a method for carrying out a post-dated electronic transaction which overcomes one or more of the above disadvantages, or which at least provides a useful alternative.

[0005] Furthermore, other desirable features and characteristics will become apparent from the subsequent detailed description and the appended claims, taken in conjunction with the accompanying drawings and this background of the disclosure.

SUMMARY

[0006] In the first aspect of the invention, a computer-implemented method, using a server, for completing a limited-time delayed electronic transaction between a payer account and a payee account is provided, the method comprising:

receiving, at the server, a transaction request relating to the limited-time delayed electronic transaction, the transaction request comprising payer data identifying the payer account, payee data identifying the payee account, a transaction amount, and an indication of a time period during which the limited-time delayed electronic transaction should be completed;

determining, at the server, if the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction based on the payer data and the payee data;

generating, by the server, a limited-time delayed transaction token for the limited-time delayed electronic transaction when it is determined that the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction, wherein the limited-time delayed transaction token identifies a status of the limited-time delayed electronic transaction during the time period; and

subsequent to the generation of the limited-time delayed transaction token:

sending, by the server, the limited-time delayed transaction token to a payer device and a payee device;

determining, at the server, if the payer account includes at least the transaction amount towards the end of the time period;

updating, by the server, the status of the limited-time delayed electronic transaction to an approved status when it is determined that the payer account includes at least the transaction amount towards the end of the time period, wherein the approved status indicates that the limited-time delayed electronic transaction is to be completed; and

completing, by the server, the limited-time delayed electronic transaction at the end of the time period when the status is updated.

[0007] In the embodiment, the step of determining if the transaction amount is comprised in the payer account towards the end of the time period further comprises deleting, by the server, the limited-time delayed transaction token at the end of the time period when it is determined that the transaction amount is not included in the payer account towards the end of the time period.

[0008] In an embodiment, the method further comprises:

cancelling, by the server, the limited-time delayed electronic transaction when the limited-time delayed transaction token is deleted by the server at the end of the time period.

[0009] In the embodiment, the step of determining if the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction further comprises determining, by the server, if the payer account is included in a list of authorised accounts for the limited-time delayed electronic transaction, the list of authorised accounts including accounts identified by the server to be authorised to be used for the limited-time delayed electronic transaction.

[0010] In the embodiment, the method further comprises verifying, at the server, the status of the limited-time delayed electronic transaction using the limited-time delayed transaction token by at least one of the payer device and the payee device within the time period.

[0011] In the embodiment, the method further comprises receiving, at the server, a notification request from the payer device, the notification request relating to a cancellation of the limited-time delayed electronic transaction;

forwarding, by the server, the notification request to the payee device in response to receiving the notification request; and

receiving, at the server, a notification response from the payee device in response to receiving the notification request, the notification response indicating whether or not the payee approves the notification request.

[0012] In an embodiment, the limited-time delayed electronic transaction is completed when the notification response indicates that the payee does not approve the notification request.

[0013] In an embodiment, the method further comprises:

notifying, by the server, the payer device and the payee device of the status of the limited-time delayed electronic transaction at the end of the time period.

[0014] In an embodiment, the time period of the limited-time delayed electronic transaction is determined by the payer.

[0015] In an embodiment, the limited-time delayed transaction token of the limited-time delayed electronic transaction comprises the transaction request.

[0016] In the second aspect of the invention, an apparatus for completing a limited-time delayed electronic transaction between a payer account identifying a payer and a payee account identifying a payee is provided, the apparatus comprising:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with at least one processor, cause the apparatus at least to:

receive a transaction request relating to the limited-time delayed electronic transaction, the transaction request comprising payer data identifying the payer account, payee data identifying the payee account, a transaction amount, and an indication of the time period during which the limited-time delayed electronic transaction should be completed;

determine if the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction based on the payer data and the payee data;

generate a limited-time delayed transaction token for the limited-time delayed electronic transaction when it is determined that the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction, wherein the limited-time delayed transaction token identifies a status of the limited-time delayed electronic transaction during the time period; and

subsequent to the generation of the limited-time delayed transaction token:

send the limited-time delayed transaction token to a payer device and a payee device;

determine if the payer account includes at least the transaction amount towards the end of the time period;

update the status of the limited-time delayed electronic transaction to an approved status when it is determined that the payer account includes at least the transaction amount towards the end of the time period, wherein the approved status indicates that the limited-time delayed electronic transaction is to be completed; and

complete the limited-time delayed electronic transaction at the end of the time period when the status is updated.

[0017] In an embodiment, the at least one memory and the computer program code is further configured with the at least one processor to delete the limited-time delayed transaction token at the end of the time period when it is determined that the transaction amount is not included in the payer account towards the end of the time period.

[0018] In an embodiment, the at least one memory and the computer program code is further configured with the at least one processor to:

cancel the limited-time delayed electronic transaction when the limited-time delayed transaction token is deleted by the server at the end of the time period.

[0019] In an embodiment, the at least one memory and the computer program code is further configured with the at least one processor to:

determine if the payer account is included in a list of authorised accounts for the limited-time delayed electronic transaction, the list of authorised accounts including accounts identified by the server to be authorised to be used for the limited-time delayed electronic transaction.

[0020] In an embodiment, the at least one memory and the computer program code is further configured with the at least one processor to:

verify the status of the limited-time delayed electronic transaction using the limited-time delayed transaction token by at least one of the payer device and the payee device within the time period.

[0021] In an embodiment, wherein the at least one memory and the computer program code is further configured with the at least one processor to:

receive a notification request from the payer device, the notification request relating to a cancellation of the limited-time delayed electronic transaction;

forward the notification request to the payee device in response to receiving the notification request; and

receive a notification response from the payee device in response to receiving the notification request, the notification response indicating whether or not the payee approves the notification request.

[0022] In an embodiment, the at least one memory and the computer program code is further configured with the at least one processor to:

cancel the limited-time delayed electronic transaction when the limited-time delayed transaction token is deleted by the server at the end of the time period.

[0023] In an embodiment, the at least one memory and the computer program code is further configured with the at least one processor to:

determine if the payer account is included in a list of authorised accounts for the limited-time delayed electronic transaction, the list of authorised accounts including accounts identified by the server to be authorised to be used for the limited-time delayed electronic transaction.

[0024] In an embodiment, the at least one memory and the computer program code is further configured with the at least one processor to:

verify the status of the limited-time delayed electronic transaction using the limited-time delayed transaction token by at least one of the payer device and the payee device within the time period.

[0025] In an embodiment, the at least one memory and the computer program code is further configured with the at least one processor to:

receive a notification request from the payer device, the notification request relating to a cancellation of the limited-time delayed electronic transaction;

forward the notification request to the payee device in response to receiving the notification request; and

receive a notification response from the payee device in response to receiving the notification request, the notification response indicating whether or not the payee approves the notification request.

[0026] In an embodiment, wherein the limited-time delayed electronic transaction is completed when the notification response indicates that the payee does not approve the notification request.

[0027] In an embodiment, the at least one memory and the computer program code is further configured with the at least one processor to:

notify the payer device and the payee device of the status of the limited-time delayed electronic transaction at the end of the time period

[0028] In an embodiment, the time period of the limited-time delayed electronic transaction is determined by the payer.

[0029] In an embodiment, wherein the limited-time delayed transaction token of the limited-time delayed electronic transaction comprises the transaction request.

[0030] In another aspect of the invention, a computer-readable storage medium having stored thereon computer program code which when executed by a computer causes the computer to execute a method in accordance with any of the above embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0031] The accompanying figures, where like reference numerals refer to identical or functionally similar elements throughout the separate views and which together with the detailed description below are incorporated in and form part of the specification, serve to illustrate various embodiments, by way of example only, and to explain various principles and advantages in accordance with a present embodiment.

[0032] FIG. 1 depicts a block diagram of a system for completing a limited-time delayed electronic transaction in accordance with a first and a second embodiment.

[0033] FIG. 2 depicts a flow chart of a method for completing a limited-time delayed electronic transaction in accordance with the first embodiment. FIG. 2 depicts the steps of receiving a transaction request massage, determining if a payer account and a payee account are authorized, generating a limited-time delayed transaction token, sending the limited-time delayed transaction token to a payer device and a payee device, determining if a transaction amount is included in the payer account towards the end of a time period, updating a status of the transaction, and completing the limited-time delayed electronic transaction.

[0034] FIG. 3, comprising FIG. 3A and FIG. 3B, depicts a flow chart of a method for completing a limited-time delayed electronic transaction in accordance with the second embodiment, wherein FIG. 3A depicts the steps of receiving a transaction request message, determining if a payer account and a payee account are authorized, generating a limited-time delayed transaction token, sending the limited-time delayed transaction token to a payer device and a payee device, and receiving a notification request from the payer device; and FIG. 3B depicts the steps of forwarding the notification request to the payee device, receiving a notification response from the payee device, determining if the payee approves the notification request, determining if a transaction amount is in the payer account towards the end of a time period, updating a status of the transaction, and completing the limited-time delayed electronic transaction.

[0035] FIG. 4 depicts a schematic diagram of a computer system suitable for use in executing the methods depicted in FIG. 2 and FIG. 3.

[0036] FIG. 5 depicts an exemplary computing device to realise a server for the payment network server 106 shown in FIG. 1.

DETAILED DESCRIPTION

[0037] Embodiments of the present invention will be described, by way of example only, with reference to the drawings. Like reference numerals and characters in the drawings refer to like elements or equivalents.

[0038] Some portions of the description which follows are explicitly or implicitly presented in terms of algorithms and functional or symbolic representations of operations on data within a computer memory. These algorithmic descriptions and functional or symbolic representations are the means used by those skilled in the data processing arts to convey most effectively the substance of their work to others skilled in the art. An algorithm is here, and generally, conceived to be a self-consistent sequence of steps leading to a desired result. The steps are those requiring physical manipulations of physical quantities, such as electrical, magnetic or optical signals capable of being stored, transferred, combined, compared, and otherwise manipulated.

[0039] Unless specifically stated otherwise, and as apparent from the following, it will be appreciated that throughout the present specification, discussions utilizing terms such as "scanning", "calculating", "determining", "replacing", "generating", "initializing", "outputting", "receiving", "retrieving", "identifying", "predicting", "sending", "updating", "completing" or the like, refer to the action and processes of a computer system, or similar electronic device, that manipulates and transforms data represented as physical quantities within the computer system into other data similarly represented as physical quantities within the computer system or other information storage, transmission or display devices.

[0040] The present specification also discloses apparatus for performing the operations of the methods. Such apparatus may be specially constructed for the required purposes, or may comprise a computer or other device selectively activated or reconfigured by a computer program stored in the computer. The algorithms and displays presented herein are not inherently related to any particular computer or other apparatus. Various machines may be used with programs in accordance with the teachings herein. Alternatively, the construction of more

specialized apparatus to perform the required method steps may be appropriate. The structure of a computer will appear from the description below.

[0041] In addition, the present specification also implicitly discloses a computer program, in that it would be apparent to the person skilled in the art that the individual steps of the method described herein may be put into effect by computer code. The computer program is not intended to be limited to any particular programming language and implementation thereof. It will be appreciated that a variety of programming languages and coding thereof may be used to implement the teachings of the disclosure contained herein. Moreover, the computer program is not intended to be limited to any particular control flow. There are many other variants of the computer program, which can use different control flows without departing from the spirit or scope of the invention.

[0042] Furthermore, one or more of the steps of the computer program may be performed in parallel rather than sequentially. Such a computer program may be stored on any computer readable medium. The computer readable medium may include storage devices such as magnetic or optical disks, memory chips, or other storage devices suitable for interfacing with a computer. The computer readable medium may also include a hard-wired medium such as exemplified in the Internet system, or wireless medium such as exemplified in the GSM mobile telephone system. The computer program when loaded and executed on such a computer effectively results in an apparatus that implements the steps of the preferred method.

[0043] Various embodiments relate to a method and an apparatus for completing a limited-time delayed electronic transaction. In an embodiment, the method for completing a limited-time delayed electronic transaction comprises a limited-time delayed transaction token identifying a status of the limited-time delayed electronic transaction within a time period during which the limited-time delayed electronic transaction is to be completed.

[0044] In the following description, a limited-time delayed electronic transaction is an electronic transaction between a payer and a payee and can be initiated by the payer through a transaction request. The limited-time delayed electronic transaction is so termed because it is not completed immediately upon request, but is only completed within a limited-time period (or "time-period"). In other words, the transaction is delayed. In an embodiment, the payer may be a customer and the payee may be a merchant. In one example, the customer may initiate the limited-time delayed electronic transaction with the merchant to buy goods and/or services from the merchant. In some embodiments a transaction request for the limited-time delayed electronic transaction is initiated by a payer device using a payer account maintained at an issuer server. Alternatively, the payer account may be maintained at a payment network server. In an embodiment, the transaction is a payment transaction. In other words, completion of the transaction involves a payment between parties to the transaction.

[0045] FIG. 1 illustrates a block diagram of a system 100 within which transaction data can be received.

[0046] The system 100 comprises a payer device 102 in communication with an issuer server 104. The payer device 102 may also be in direct communication with a payment network server 106, without having to communicate with the issuer server 104. In specific embodiments, the payer device 102 may also be in direct communication with a payee device 110, without having to communicate with the issuer server 104 or the payment network server 106.

[0047] The issuer server 104 is in communication with the payment network server 106. The payment network server 106, in turn, is in communication with an acquirer server 108. The acquirer server 108, in turn, is in communication with the payee device 110. In specific embodiments, the payment network server 106 may also be in direct communication with the payee device 110.

[0048] Use of the term 'server' herein can mean a single computing device or a plurality of interconnected computing devices which operate together to perform a particular function. That is, the server may be contained within a single hardware unit or be distributed among several or many different hardware units.

[0049] The payer device 102 typically is associated with a customer who is a party to a transaction that occurs between the payer device 102 and the payee device 110 through a transaction. The payer device 102 may be a fixed (wired) computing device or a wireless (portable) computing device. In specific implementations, the payer device 102 may be a handheld or portable or mobile device carried or used by the customer, or may refer to other types of electronic devices such as a personal computer, a land-line telephone or an interactive voice response (IVR) system and the like. The mobile device may be a device, such as a mobile phone, a laptop computer, a personal digital computer (PDA), a mobile computer, a portable music player (such as an iPod™ and the like).

[0050] The issuer server 104 generally is associated with an issuer and may include one or more computing devices that are used to perform a payment transaction. The issuer may be an entity (e.g. a company or organization, such as a bank, a mobile network operator or a retailer) which issues (e.g. establishes, manages, administers) a transaction credential or an account (e.g. a financial bank account). An account, which may also be termed as a payer account, may be associated with a plurality of payer devices 102.

[0051] The payment network server 106 typically is associated with a payment network. For example, the payment network server 106 may be part of the Banknet® network operated by MasterCard®. The payment network (e.g. MasterCard®) operates to process transactions, clear and settle funds for payments between two entities (e.g. two banks). The payment network server 106 may include one or more computing devices that are used for processing transactions. An exemplary payment network server 106 is shown in FIG. 5.

[0052] The acquirer server 108 generally is associated with an acquirer who may be an entity (e.g. a company or organization) which issues (e.g. establishes, manages, administers) a transaction credential or an account (e.g. a financial bank account) of the payee / merchant. An account of the payee / merchant may also be known as a payee account. Examples of the acquirer include a bank and/or other financial institution. As stated in the above, the acquirer server 108 may include one or more computing devices that are used to establish communication with another server by exchanging messages with and/or passing information to the other server.

[0053] The payee device 110 typically is associated with a payee / merchant who is also a party to the transaction that occurs between the payer device 102 and the payee device 110 through the transaction. In an embodiment, the payee device 110 may also be associated with any one party who has an arrangement with the payer to execute a transaction between them. The payee device 110 may be a point-of-sale (POS) terminal, an automatic teller machine (ATM), a personal computer, a computer server (hosting a website, for example), an IVR system, a land-line telephone, or any type of mobile device such as a mobile phone, a personal digital assistant (PDA), a laptop computer, a tablet computer and the like.

[0054] The payment network server 106 may be configured to communicate with, or may include, a database (or a transaction database) 112. The transaction database 112 stores data corresponding to a transaction (or transaction data). Examples of the data include Transaction ID, Payee ID, Payer Name, Payee Name, Payee Country, Payee Address, Payee Postal Code. For example, data ("Payee name" or "Payee ID") relating to the payee, time and date for which the goods / services relating to the transaction will be delivered are included in the database 112. In some embodiments, the data also include payer data which identify a payer account and payee data which identify a payee account. In some embodiments, the payer account and the payee account are associated with corresponding accounts in the issuer server and the acquirer server respectively. In some embodiments, the data also comprise transaction history of the payer and the payee. In some embodiments, the data also comprise a list of unauthorized accounts which

can be relied upon to identify accounts which are unauthorized to be used for the limited-time delayed electronic transaction. Further details on how these data are utilised and managed are described in FIG. 2 below.

[0055] In a preferred embodiment, the payer device 102 is capable of wireless communication using a suitable protocol with the issuer server 104. In some embodiments, the wireless communication comprises established telecommunication known in the art such as GSM, CDMA, WIFI or the like. In some embodiments, the wireless communication is established through the Internet via a website associated with the issuer server 104. In another embodiment, the payer device 102 is capable of wireless communication using a suitable protocol with the payee device 110. For example, embodiments may be implemented using payer devices 102 that are capable of communicating with WiFi / Bluetooth-enabled payee devices 110. It will be appreciated by a person skilled in the art that depending on the wireless communication protocol used, appropriate handshaking procedures may need to be carried out to establish communication between the payer device 102 and the payee device 110. For example, in the case of Bluetooth communication, discovery and pairing of the payer device 102 and the payee device 110 may be carried out to establish communication.

[0056] In an example, during a limited-time delayed electronic transaction, a transaction request 114 is generated at the payer device 102. The transaction request 114 is generated by the payer device 102 in response to the payer (or customer) making a selection of goods and/or services to be purchased from the payee (or merchant). In other words, the transaction request 114 relates to a transaction between the payer and the payee. In a preferred embodiment, the payer may have made arrangements / agreements with the payee, resulting in the transaction request 114. In some embodiments, the payer and the payee are registered users of (i) accounts issued by a bank or financial institution and maintained at an issuer server 104 and (ii) accounts issued by a bank or financial institution and maintained at an acquirer server 108 respectively. Alternatively, the payer and the payee may be registered users of accounts issued directly with a payment network server 106. The transaction request 114 generated by the payer device 102 may then be

communicated to the payment network server 106 via the issuer server 104. In another embodiment, the transaction request 114 may be communicated directly to the payment network server 106 without communicating the transaction request 114 via the issuer server 104. In some embodiments, the transaction request 114 may be communicated by any means known to a person skilled in the art, for example wireless communications such as NFC, WIFI, Bluetooth, the public Internet or any other form of viable means of data communications. In yet another embodiment, the transaction may be performed via a website of the payee / merchant. In specific implementations, the payer device 102 may be fitted with a wireless communications interface such as a Near Field Communication (NFC) interface to enable the payer device 102 to electronically communicate with the payer device 110 to perform the transaction. NFC is a set of standards to establish radio communication between devices by bringing them into close proximity such as only a few centimetres. NFC standards cover communication protocols and data exchange formats, and are based on radio-frequency identification (RFID) technology. Alternatively, infra-red technology may also be used.

[0057] In an embodiment, the transaction request 114 comprises corresponding transaction data relating to a transaction and identifies the payer and the payee, generally by way of identifiers each associated with the payer and the payee respectively. The transaction data also indicate a time and/or date at which the transaction is to be completed. The time and/or date may be referred to as the time period. That is, the transaction request 114 also comprises an indication of the time period within which the limited-time delayed electronic transaction should be completed. In some embodiments, the transaction data comprises the name of the payer, the name of the payee, the names of a payer bank and a payee bank associated with the issuer server and the acquirer server respectively, and a payee bank account number. In some embodiments, the transaction data also comprise the payer bank's code and the payee bank's code which identify a bank, for example Indian Financial System Code (IFSC), Bank Identifier Number (BIN), Society for Worldwide Interbank Financial Telecommunication (SWIFT) code, and International Bank Account Number (IBAN). In some embodiments, the transaction data also

identify the goods and/or services to be purchased and a type or nature of the transaction. In some embodiments, the transaction data further identify a value or price of the goods and/or services (e.g., a transaction amount). In some embodiments, the transaction data also indicate a time and a date at which the transaction was initiated by the payer.

[0058] The following types of transaction data may be included in the transaction request 114:

Transaction level information:-

- Payer ID (anonymized)
- Payee ID
- Name of Payer
- Name of Payee
- Name of Payer Bank
- Name of Payee Bank
- Transaction Amount
- Transaction Local Currency Amount
- Date of Transaction
- Time of Transaction
- Type of Transaction
- Date of Processing
- Date to complete Transaction
- Time to complete Transaction
- Bank Codes (e.g. IFSC, BIN, SWIFT, IBAN etc)
- Merchant Category Code (MCC)

Account (or Profile) Information:-

- Account ID (anonymized)
- Payer Bank Account Number

- Payee Bank Account Number

Payee / Merchant Information:-

- Payee / Merchant ID
- Payee / Merchant Name
- MCC / Industry Code
- Industry Description
- Payee / Merchant Country
- Payee / Merchant Address
- Payee / Merchant Postal Code
- Payee / Merchant Acquirer Country
- Payee / Merchant Acquirer ID

Issuer Information:-

- Issuer ID
- Issuer Name
- Issuer Country

[0059] In the preferred embodiment, the transaction request 114 is sent to the payment network 106 via the issuer server 104. This may be done via the Internet through an appropriate website associated with the issuer server 104. In another embodiment, the transaction request 114 may be sent directly to the payment network server 106, without having to communicate through the issuer server 104. This may be done via the Internet through an appropriate website associated directly with the payment network server 106. In yet another embodiment, the transaction request 114 is sent directly from the payer device 102 to the payee device 110. In an embodiment, for example, where the transaction is being performed at the website of the payee / merchant, the payer device 102 and the payee / merchant device 110 are in communication with a network, such as, the Internet (not shown for the sake of simplicity). In an embodiment, the

transaction request 114 is sent from the payer device 102 to the payee device 110 via the network.

[0060] As mentioned above, the role of the payment network server 106 is to facilitate communication between the issuer server 104 and the acquirer server 108. Therefore, the payment network server 106 may serve as a means through which the acquirer server 108 may communicate with the issuer server 104 in a manner that payments and authentication may be performed. In specific implementations, the payment network server 106 may receive transaction data when completing a transaction for a payer and subsequently store and/or update the transaction data in the database 112.

[0061] In specific implementations, the payment network server 106 is further configured to perform additional operations. For example, the payment network server 106 may be configured to determine if the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction based on the payer data and the payee data. In some embodiments, the payment network server 106 may be configured to generate a limited-time delayed transaction token 116 for the limited-time delayed electronic transaction when it is determined that the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction, wherein the limited-time delayed transaction token 116 identifies a status of the limited-time delayed electronic transaction. In some embodiments, the payment network server 106 is also configured to send the limited-time delayed transaction token 116 to both the payer device 102 and the payee device 110. In some embodiments, the payment network server 106 is further configured to determine if the payer account includes at least the transaction amount towards the end of a time period (e.g. close to or on the date to complete transaction as comprised in the transaction request). In some embodiments, the payment network server 106 is also configured to update the status of the limited-time delayed electronic transaction to an approved status , indicating that the limited-time delayed electronic transaction is to be completed, when it is determined that the payer account includes at least the

amount towards the end of the time period. In some embodiments, the payment network server 106 is further configured to complete the limited-time delayed electronic transaction 122 at the end of the time period when the status is updated to an approved status.

[0062] In another embodiment for completing the limited-time delayed electronic transaction 122, the payment network server 106 is configured to provide a means for the payer and/or the payee to verify the status of the transaction using the limited-time delayed transaction token via the payer device 102 and/or the payee device 110 respectively. In some embodiments, the payment network server 106 is configured to receive a notification request 118 from the payer device wherein the notification request 118 relates to a cancellation of the limited-time delayed electronic transaction. That is, the payer may send the notification request 118 to indicate that he wishes to cancel the limited-time delayed electronic transaction. In some embodiments, the payment network server 106 is also configured to forward the notification request 118 to the payee device in response to receiving the notification request 118. In some embodiments, the payment network server is further configured to receive a notification response 120 from the payee device 110 in response to receiving the notification request 118, indicating whether or not the payee approves the notification request 118.

[0063] The process to complete the limited-time delayed electronic transaction described above involves multiple parties (e.g., payer/customer, payee/merchant, acquirer, issuer, payment facilitator). However, the limited-timed delayed electronic transaction may essentially be viewed as a transaction between a payer and a payee (with the other parties facilitating the transaction).

[0064] FIG. 2 shows a flow chart 200 illustrating a computer-implemented method for completing a limited-time delayed electronic transaction. The limited-time delayed electronic transaction comprises a limited-time delayed transaction token which identifies a status of the limited-time delayed electronic transaction within a time period during which the limited-time delayed electronic transaction is to be completed according to a present embodiment.

[0065] Referring to FIG. 2, at step 202, a transaction request 114 is received by the payment network server 106. That is, the transaction request 114 is generated when the payer initiates a limited-time delayed electronic transaction when he wants to purchase a good and/or service and he does not have an amount corresponding to a value of the good and/or service in the payer account. The transaction request 114 includes payer data that identifies the payer account. In an embodiment, the transaction request 114 is initiated by the payer via the payer device 102 to the payment network server 106. In an embodiment, the transaction request 114 can be sent by the payer device 102 to the payment network server 106 via the issuer server 104. In another embodiment, the transaction request 114 can be sent by the payer device 102 to the payment network server 106 directly without communicating the transaction request 114 via the issuer server 104. In an embodiment, the transaction request comprises payer data identifying the payer account and payee data identifying the payee account. In some embodiments, the transaction request 114 comprises at least the name of the payee, the name of the payer bank associated with the issuer server 104, the name of the payee bank associated with the acquirer server 106, the payee bank account number, the bank codes for the payer bank and the payee bank, the date to complete the limited-time delayed electronic transaction, and the transaction amount.

[0066] At step 204, after the payment network server 106 has received the transaction request 114 from the payer, the payment network server is configured to determine if the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction based on the payer data / information and the payee data / information. In some embodiments, the payment network server 106 is configured to check the payer data associated with the payer account and the payee data associated with the payee account against a list of authorised accounts for the limited-time delayed electronic transaction, the list of authorised accounts including accounts identified by the server which are authorised to be used for the limited-time delayed electronic transaction. In some embodiments, the list of authorised accounts is generated by the payment network server 106 using a transaction history of accounts stored in the transaction database 112, where the transaction history of accounts comprise at least a credit

rating relating to a percentage of successful transactions carried out by the accounts. In some embodiments, an account has a higher credit rating if it has a higher percentage of successful transactions that are completed, where the percentage of successful transactions is defined as the number of successful transactions divided by the total number of transactions carried out by the account (and optionally multiplied by 100). In another embodiment, the list of authorised accounts may comprise a list of accounts which are registered for limited-time delayed electronic transactions. In some embodiments, where the list of authorised accounts and the list of accounts which are registered for limited-time delayed electronic transactions are of separate lists, the server 106 checks whether both accounts are registered for limited-time delayed electronic transactions and then checks whether the payer account is in good standing and / or has higher than a threshold percentage of successful transactions, where the threshold percentage of successful transactions is a parameter which can be determined by the payment network.

[0067] Based on the results of step 204, the payment network server 106 is configured to either send a failure message to the payer device 102 and the payee device 110 in step 216 if it is determined that the payer account or the payee account are not authorised to carry out the limited-time delayed electronic transaction, or to generate a limited-time delayed transaction token to be sent to the payer device 102 and the payee device 110 in step 206 if it is determined that the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction.

[0068] In an embodiment, at step 216, the failure message is sent to the payer device 102 and the payee device 110 once it is determined that the payer account or the payee account are not authorised to carry out the limited-time delayed electronic transaction. In some embodiments, the payment network server 106 is configured to delete the transaction request 114 once it has sent the failure message to the payer device 102 and the payee device 110.

[0069] At step 206, in some embodiments, the payment network server 106 is configured to generate the limited-time delayed transaction token based on the transaction request 114 received

at step 202. In an embodiment, the limited-time delayed transaction token identifies a status of the limited-time delayed electronic transaction within a time period, where the time period is defined as the period of time between the date of transaction and the date of completing the transaction stipulated in the transaction request 114. In some embodiments, the limited-time delayed transaction token is unique for each limited-time delayed electronic transaction. In some embodiments, the limited-time delayed transaction token can be in the form of an identifier, or a PIN.

[0070] Once the limited-time delayed transaction token is generated at step 206, the limited-time delayed transaction token is sent to the payer device 102 and the payee device 110 at step 208. In a preferred embodiment, the payment network server 106 communicates the limited-time delayed transaction token directly to the payer device 102 and the payee device 110. In another embodiment, the payment network server 106 may communicate the limited-time delayed transaction token to the payer device 102 and the payee device 110 via the issuer server 104 and the acquirer server 108 respectively. In some embodiments, the limited-time delayed transaction token may be communicated by any means known to a person skilled in the art, for example wireless communications such as NFC, WIFI, Bluetooth, the public Internet (whether connected via a wireless or wired interface), or any other form of viable means of data communications. Alternatively, RFID and infra-red technology may also be used.

[0071] After step 208 is performed, the limited-time delayed electronic transaction is in progress. Towards the end of the time period, the payment network server 106 is configured to determine if at least the transaction amount is included in the payer account at step 210. In some embodiments, the payment network server 106 is configured to communicate a request to the issuer server 104 to check if the payer account associated with the issuer server 104 comprises at least the transaction amount towards the end of the time period. In an embodiment, step 210 can be performed preferably at the end of the time period, but can also be performed at a predetermined time (e.g. one to three days) before the end of the time period. In some embodiments, the communication between the issuer server 104 and the payment network server

106 is through a secure protocol. In some embodiments, no other information is communicated between the issuer server 104 and the payment server 106 except for a binary answer of “yes” or “no” to the request to check if the payer account comprises at least the transaction amount. In an embodiment, the result of the request may be communicated to the payer device 102 if the transaction amount is not comprised in the payer account towards the end of the time period, before the end of the time period. In some embodiments, the result of the request is communicated directly to the payer device 102 by the payment network server 106. In an embodiment, the result of the request may be communicated to the payer device 102 by the payment network server 106 via the issuer server 104.

[0072] After step 210 is performed at the end of the time period, the payment network server 106 is configured to either cancel the limited-time delayed electronic transaction at step 218 if the transaction amount is not present in the payer account at the end of the time period, or to update the status of the transaction at step 212 to an approved status, indicating that the limited-time delayed electronic transaction is to be completed, if the transaction amount is present in the payer account at the end of the time period.

[0073] At step 218, the limited-time delayed electronic transaction is cancelled by the payment network server 106 when it is determined that the transaction amount is not present in the payer account at the end of the time period. In some embodiments, a failure message is sent by the payment network server 106 directly to the payer device 102 and the payee device 110 once the limited-time delayed electronic transaction is cancelled. That is, the limited-time delayed electronic transaction will not be completed at the end of the time period. In some embodiments, the payment network server 106 is configured to update the transaction history at the transaction database 112 once it has sent the failure message to the payer device 102 and the payee device 110. In some embodiments, an unsuccessful transaction of the payer account and the payee account is recorded in the transaction history. In another embodiment, the failure message may be communicated to the payer device 102 and the payee device 110 by the payment network

server 106 via the issuer server 102 and the acquirer server 108 respectively. In yet another embodiment, the limited-time transaction token may be deleted by the payment network server 106 at the end of step 218.

[0074] At step 212, the status of the limited-time delayed electronic transaction is updated to an approved status, indicating that the limited-time delayed electronic transaction is to be completed, when it is determined at step 210 that at least the transaction amount is comprised in the payer account towards the end of the time period. In some embodiments, the status of the limited-time delayed electronic transaction is updated to an approved status at the end of the time period. In some embodiments, the status of the limited-time delayed electronic transaction is updated to an approved status to initiate a completion of the transaction. In some embodiments, the approved status of the limited-time delayed electronic transaction is communicated to the payer device 102 and the payee device 110 directly by the payment network server 106 at the end of the time period. In another embodiment, the approved status of the limited-time delayed electronic transaction may be communicated to the payer device 102 and the payee device 110 by the payment network server 106 via the issuer server 104 and the acquirer server 108 respectively.

[0075] At step 214, the limited-time delayed electronic transaction is completed at the end of the time period when the status is updated to an approved status at step 212. In some embodiments, at step 214, the payment network server 106 is configured to communicate a request to the issuer server 104 to transfer the transaction amount from the payer account associated with the issuer server 104 to the payee account associated with the acquirer server 108 at the end of the time period when the status is updated. In some embodiments, the communication between the issuer server 104 and the payment network server 106, and the communication between the payment network server 106 and the acquirer server 108 is through secure protocols. In some embodiments, the payment network server 106 is configured to update the transaction history at the transaction database 112 once it has completed the limited-time delayed electronic

transaction at step 214. In some embodiments, a successful transaction is recorded in the transaction history of the payer account and the payee account. In some embodiments, the payment network server 106 notifies the payer device 102 and the payee device 110 of the completion of the limited-time delayed electronic transaction at the end of step 214. In another embodiment, the payment network server 106 may notify the payer device 102 and the payee device 110 of the completion of the limited-time delayed electronic transaction 122 via the issuer server 102 and the acquirer server 108 respectively.

[0076] Referring to FIG. 3, comprising FIG. 3A and FIG. 3B, a flow chart of a method for completing a limited-time delayed electronic transaction in accordance with the second embodiment is depicted. FIG. 3A depicts the steps of receiving a transaction request massage (i.e. step 302), determining if a payer account and a payee account are authorized (i.e. step 304), generating a limited-time delayed transaction token (i.e. step 306), sending the limited-time delayed transaction token to a payer device and a payee device (i.e. step 308), and receiving a notification request from the payer device (i.e. step 320). FIG. 3B, a continuation of the flowchart in FIG. 3A, depicts the steps of forwarding the notification request to the payee device (i.e. step 322), receiving notification response from the payee device (i.e. step 324), determining if the payee approves the notification request (i.e. step 326), determining if a transaction amount is in the payer account towards the end of a time period (i.e. step 310), updating a status of the transaction (i.e. step 312), and completing the limited-time delayed electronic transaction (i.e. step 314). In some embodiments the steps 302, 304, 306 and 308 in FIG. 3A and steps 310, 312 and 314 in FIG. 3B are similar to the steps 202, 204, 206, 208, 210, 212 and 214 of the method as discussed in FIG. 2 respectively. For completeness, the step 316 of FIG. 3A and step 318 of FIG. 3B are also similar to the steps 216 and 218 of FIG. 2 respectively. The purpose of FIG 3A and FIG. 3B is to illustrate another embodiment of the method for completing a limited-time delayed electronic transaction, where step 320 of FIG. 3A and steps 322, 324, 326, 328 of FIG. 3B are comprised into the method presented in FIG. 2 to allow access by the payer via the payer device 102 and/or the payee via the payee device 110 to the payment network server 106 to

verify the status of the limited-time delayed electronic transaction using the limited-time delayed transaction token within the time period. This advantageously allows the payer and/or the payee to change the status of the limited-time delayed electronic transaction before the end of the time period.

[0077] At step 320, the payment network server 106 is configured to receive a notification request 118 from the payer device 102 where the notification request 118 relates to a blocking or cancellation of the limited-time delayed electronic transaction. That is, the notification request 118 may entreat the limited-time delayed electronic transaction to be put on hold (e.g. blocked) or be void (e.g.. cancelled). In some embodiments, the notification request 118 is communicated to the payment network server 106 directly by the payer device 102. In another embodiment, the notification request 118 may also be communicated to the payment network server 106 via the issuer server 104. In some embodiments, the notification request 118 is received at the payment network server 106 within the time period of the limited-time delayed electronic transaction. In some embodiments, there is a time period during which the notification request 118 is to be responded. In some embodiments, the time period during which the notification request 118 is to be responded is determined and agreed upon by the payer and the payee at the onset of initiating the limited-time delayed electronic transaction. In some embodiments, the time period during which the notification request 118 is to be responded is comprised in the transaction request 114. In some embodiments, the time period during which the notification request 118 is to be responded start from the time at which the payee has received the notification request 118 via the payee device 110.

[0078] After receiving the notification request 118 from the payer device 102 at step 320, the payment network server 106 is configured to forward the notification request 118 to the payee device 110 at step 322 in response to receiving the notification request 118. In some embodiments, the payment network server 106 communicates the notification request 118 directly with the payee device 110. Alternatively, the payment network server 106 may

communicate the notification request 118 to the payee device 110 via the acquirer server 108. In some embodiments, the payment network server is configured to forward the notification request 118 to the payee device 110 after receiving the notification request 118 from the payer device 102.

[0079] At step 324, the payment network server 106 is configured to receive a notification response 120 from the payee device 110 in response to receiving the notification request 118, the notification response 120 indicates whether or not the payee approves the notification request 118. In some embodiments, the notification response 120 from the payee device 110 is communicated directly to the payment network server 106. Alternatively, the notification response 120 from the payee device 110 may be communicated to the payment network server 106 via the acquirer server 108. In some embodiments, the notification response 120 from the payee device 110 is received at the payment network server 106 within the stipulated time period during which the notification request 118 is to be responded. Alternatively, if no notification response 120 from the payee device 110 is received at the payment network server 106 at the end of the stipulated time period during which the notification request 118 is to be responded, the payment network server 106 may consider the notification response 120 to be a predetermined notification response which is agreed upon by the payer and the payee at the onset of initiating the limited-time delayed electronic transaction. In an embodiment, the predetermined notification response 120 may be to cancel the limited-time delayed electronic transaction if it is blocked at the end of the time period. In another embodiment, the predetermined notification response 120 may be considered as a “no” if the notification response 120 is not received at the payment network server 106 within the stipulated time period. In some embodiments, the stipulated time period during which the notification request 118 is to be responded is comprised in the transaction request 114. In some embodiments, the predetermined notification response 120 is comprised in the transaction request 114. In some embodiments, no other information is communicated between the acquirer server 108 and the payment server 106 or between the payee

device 110 and the payment server 106 except for a binary answer of “yes” or “no” in the notification response 120.

[0080] At step 326, the payment network server 106 is configured to determine if the payee approves the notification request 118. In some embodiments, the payment network server 106 is configured to either cancel the limited-time delayed electronic transaction at step 328 if the payee approves the notification request 118 in the notification response 120, or to further determine if the transaction amount is comprised in the payer account towards the end of the time period at step 310 if the payee does not approve the notification request 118 in the notification response 120. In an embodiment, if the notification request 118 from the payer device 102 is to block the limited-time delayed electronic transaction, the payment network server 106 may be configured to cancel the limited-time delayed electronic transaction at step 328 at the end of the time period. In an embodiment, the payer may send a request to the payment network server 106 to unblock the limited-time delayed electronic transaction before the end of the time period if the limited-time delayed electronic transaction is blocked. In some embodiments, the blocked limited-time delayed electronic transaction recommences or reinitiates at step 320 when it is unblocked.

[0081] At step 328, the failure message may be sent by the payment network server 106 directly to the payer device 102 and the payee device 110 once it is determined that the limited-time delayed electronic transaction is to be cancelled at step 326. In some embodiments, the payment network server 106 is configured to update the transaction history at the transaction database 112 once it has sent the failure message to the payer device 102 and the payee device 110. In some embodiments, the transaction history will record an unsuccessful transaction in the record of the payer account and the payee account. In an embodiment, the failure message may be communicated to the payer device 102 and the payee device 110 by the payment network server 106 via the issuer server 102 and the acquirer server 108 respectively. In another embodiment,

the limited-time transaction token 116 may be deleted by the payment network server 106 at the end of step 328.

[0082] In an embodiment, there may be more than one iteration for steps 320-326 through the entire time period of the limited-time delayed electronic transaction. In some embodiments, the payer is allowed to send notification request 118 to the payment network server 106 via the payer device 102 as often as the payer deems fit to be appropriate, as long as the limited-time delayed electronic transaction is not cancelled and that the limited-time transaction token has not been deleted by the payment network server 106.

[0083] Similar to step 210, when it is near to the end of the time period and that the payee has not approved any notification request to cancel the limited-time delayed electronic transaction, the payment network server 106 is configured to determine if the transaction amount is comprised in the payer account at step 310. The details of step 310, which is similar to step 210, can be found in the description for FIG. 2. After step 310 is performed at the end of the time period, the payment server is configured to either cancel the limited-time delayed electronic transaction at step 318 if the transaction amount is not comprised in the payer account at the end of the time period, or to update the status of the transaction at step 312 to an approved status , indicating that the limited-time delayed electronic transaction is to be completed, if the transaction amount is comprised in the payer account at the end of the time period. The details of steps 318 and 312 are analogous to that of steps 218 and 212 respectively and can be found in the description for FIG.2. Subsequently, when the status is updated to an approved status at the completion of step 312, the limited-time delayed electronic transaction is completed at the end of the time period at step 314. The details of step 314 are substantially similar to that of step 214 and can also be found in the description for FIG. 2.

[0084] Additionally, the payment network server 106 may be configured to update the database 112 when completing a current transaction 122. This helps to keep the transaction data relevant

and updated. The payment network server 106 may also be configured to update the database 112 when a payer or a payee registers an account at the payment network server 106 or when a payer or a payee registers an account with a bank or a financial institution associated with an issuer server 104 or a bank or a financial institution associated with an acquirer server 108 respectively.

[0085] FIG. 4 depicts an exemplary computer / computing device 400, hereinafter interchangeably referred to as a computer system 400, where one or more such computing devices 400 may be used to facilitate execution of the above-described method for completing a limited-time delayed electronic transaction. In addition, one or more components of the computer system 400 may be used to realize a computer. The following description of the computing device 400 is provided by way of example only and is not intended to be limiting.

[0062] As shown in FIG. 4, the example computing device 400 includes a processor 404 for executing software routines. Although a single processor is shown for the sake of clarity, the computing device 400 may also include a multi-processor system. The processor 404 is connected to a communication infrastructure 406 for communication with other components of the computing device 400. The communication infrastructure 406 may include, for example, a communications bus, cross-bar, or network.

[0063] The computing device 400 further includes a main memory 408, such as a random access memory (RAM), and a secondary memory 410. The secondary memory 410 may include, for example, a storage drive 412, which may be a hard disk drive, a solid state drive or a hybrid drive and/or a removable storage drive 414, which may include a magnetic tape drive, an optical disk drive, a solid state storage drive (such as a USB flash drive, a flash memory device, a solid state drive or a memory card), or the like. The removable storage drive 414 reads from and/or writes to a removable storage medium 418 in a well-known manner. The removable storage medium 418 may include magnetic tape, optical disk, non-volatile memory storage medium, or

the like, which is read by and written to by removable storage drive 414. As will be appreciated by persons skilled in the relevant art(s), the removable storage medium 418 includes a computer readable storage medium having stored therein computer executable program code instructions and/or data.

[0064] In an alternative implementation, the secondary memory 410 may additionally or alternatively include other similar means for allowing computer programs or other instructions to be loaded into the computing device 400. Such means can include, for example, a removable storage unit 422 and an interface 420. Examples of a removable storage unit 422 and interface 420 include a program cartridge and cartridge interface (such as that found in video game console devices), a removable memory chip (such as an EPROM or PROM) and associated socket, a removable solid state storage drive (such as a USB flash drive, a flash memory device, a solid state drive or a memory card), and other removable storage units 422 and interfaces 420 which allow software and data to be transferred from the removable storage unit 422 to the computer system 400.

[0065] The computing device 400 also includes at least one communication interface 424. The communication interface 424 allows software and data to be transferred between computing device 400 and external devices via a communication path 426. In various embodiments of the inventions, the communication interface 424 permits data to be transferred between the computing device 400 and a data communication network, such as a public data or private data communication network. The communication interface 424 may be used to exchange data between different computing devices 400 which such computing devices 400 form part an interconnected computer network. Examples of a communication interface 424 can include a modem, a network interface (such as an Ethernet card), a communication port (such as a serial, parallel, printer, GPIB, IEEE 1394, RJ25, USB), an antenna with associated circuitry and the like. The communication interface 424 may be wired or may be wireless. Software and data transferred via the communication interface 424 are in the form of signals which can be

electronic, electromagnetic, optical or other signals capable of being received by communication interface 424. These signals are provided to the communication interface via the communication path 426.

[0066] As shown in FIG. 4, the computing device 400 further includes a display interface 402 which performs operations for rendering images to an associated display 430 and an audio interface 432 for performing operations for playing audio content via associated speaker(s) 434.

[0067] As used herein, the term "computer program product" may refer, in part, to removable storage medium 418, removable storage unit 422, a hard disk installed in storage drive 412, or a carrier wave carrying software over communication path 426 (wireless link or cable) to communication interface 424. Computer readable storage media refers to any non-transitory, non-volatile tangible storage medium that provides recorded instructions and/or data to the computing device 400 for execution and/or processing. Examples of such storage media include magnetic tape, CD-ROM, DVD, Blu-ray™ Disc, a hard disk drive, a ROM or integrated circuit, a solid state storage drive (such as a USB flash drive, a flash memory device, a solid state drive or a memory card), a hybrid drive, a magneto-optical disk, or a computer readable card such as a SD card and the like, whether or not such devices are internal or external of the computing device 400. Examples of transitory or non-tangible computer readable transmission media that may also participate in the provision of software, application programs, instructions and/or data to the computing device 400 include radio or infra-red transmission channels as well as a network connection to another computer or networked device, and the Internet or Intranets including e-mail transmissions and information recorded on Websites and the like.

[0068] The computer programs (also called computer program code) are stored in main memory 408 and/or secondary memory 410. Computer programs can also be received via the communication interface 424. Such computer programs, when executed, enable the computing device 400 to perform one or more features of embodiments discussed herein. In various

embodiments, the computer programs, when executed, enable the processor 404 to perform features of the above-described embodiments. Accordingly, such computer programs represent controllers of the computer system 400.

[0069] Software may be stored in a computer program product and loaded into the computing device 400 using the removable storage drive 414, the storage drive 412, or the interface 420. Alternatively, the computer program product may be downloaded to the computer system 400 over the communications path 426. The software, when executed by the processor 404, causes the computing device 400 to perform functions of embodiments described herein.

[0070] It is to be understood that the embodiment of FIG. 4 is presented merely by way of example. Therefore, in some embodiments one or more features of the computing device 400 may be omitted. Also, in some embodiments, one or more features of the computing device 400 may be combined together. Additionally, in some embodiments, one or more features of the computing device 400 may be split into one or more component parts.

[0071] In an implementation, the payment network server 106 may be generally described as a physical device comprising at least one processor 502 and at least one memory 504 including computer program code. The at least one memory 504 and the computer program code are configured to, with the at least one processor 502, cause the physical device to perform the operations described in FIG. 2 and FIG. 3. An example of the payment network server 106 is shown in FIG. 5.

[0072] For example, the method of FIG. 2 and FIG. 3 may be implemented as software and stored in a non-transitory fashion in the secondary memory 410 or the removable storage drive 414 of the computer device 400.

[0073] It will be appreciated by a person skilled in the art that numerous variations and/or modifications may be made to the present invention as shown in the specific embodiments

without departing from the spirit or scope of the invention as broadly described. For example, the above description mainly discusses the use of a Bluetooth connection, but it will be appreciated that another type of secure wireless connection, such as Wi-Fi, can be used in alternate embodiments to implement the method. Some modifications, e.g. adding an access point, changing the log-in routine, etc. may be considered and incorporated. The present embodiments are, therefore, to be considered in all respects to be illustrative and not restrictive.

WHAT IS CLAIMED:

1. A computer-implemented method, using a server, for completing a limited-time delayed electronic transaction between a payer account and a payee account, the method comprising:

receiving, at the server, a transaction request relating to the limited-time delayed electronic transaction, the transaction request comprising payer data identifying the payer account, payee data identifying the payee account, a transaction amount, and an indication of a time period during which the limited-time delayed electronic transaction should be completed;

determining, at the server, if the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction based on the payer data and the payee data;

generating, by the server, a limited-time delayed transaction token for the limited-time delayed electronic transaction when it is determined that the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction, wherein the limited-time delayed transaction token identifies a status of the limited-time delayed electronic transaction during the time period; and

subsequent to the generation of the limited-time delayed transaction token:

sending, by the server, the limited-time delayed transaction token to a payer device and a payee device;

determining, at the server, if the payer account includes at least the transaction amount towards the end of the time period;

updating, by the server, the status of the limited-time delayed electronic transaction to an approved status when it is determined that the payer account includes at least the transaction amount towards the end of the time period, wherein the approved status indicates that the limited-time delayed electronic transaction is to be completed; and

completing, by the server, the limited-time delayed electronic transaction at the end of the time period when the status is updated.

2. The method according to claim 1, wherein the step of determining if the transaction amount is comprised in the payer account towards the end of the time period further comprises deleting, by the server, the limited-time delayed transaction token at the end of the time period when it is determined that the transaction amount is not included in the payer account towards the end of the time period.

3. The method according to claim 2, further comprising:

cancelling, by the server, the limited-time delayed electronic transaction when the limited-time delayed transaction token is deleted by the server at the end of the time period.

4. The method according to claim 1, wherein the step of determining if the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction further comprises determining, by the server, if the payer account is included in a list of authorised accounts for the limited-time delayed electronic transaction, the list of authorised accounts including accounts identified by the server to be authorised to be used for the limited-time delayed electronic transaction.

5. The method according to claim 1, further comprising:

verifying, at the server, the status of the limited-time delayed electronic transaction using the limited-time delayed transaction token by at least one of the payer device and the payee device within the time period.

6. The method according to any one of the preceding claims, further comprising:

receiving, at the server, a notification request from the payer device, the notification request relating to a cancellation of the limited-time delayed electronic transaction;

forwarding, by the server, the notification request to the payee device in response to receiving the notification request; and

receiving, at the server, a notification response from the payee device in response to receiving the notification request, the notification response indicating whether or not the payee approves the notification request.

7. The method according to claim 6, wherein the limited-time delayed electronic transaction is completed when the notification response indicates that the payee does not approve the notification request.

8. The method according to any one of the preceding claims, further comprising:

notifying, by the server, the payer device and the payee device of the status of the limited-time delayed electronic transaction at the end of the time period.

9. The method according to any one of the preceding claims, wherein the time period of the limited-time delayed electronic transaction is determined by the payer.

10. The method according to any one of the preceding claims, wherein the limited-time delayed transaction token of the limited-time delayed electronic transaction comprises the transaction request.

11. An apparatus for completing a limited-time delayed electronic transaction between a payer account identifying a payer and a payee account identifying a payee, the apparatus comprising:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with at least one processor, cause the apparatus at least to:

receive a transaction request relating to the limited-time delayed electronic transaction, the transaction request comprising payer data identifying the payer account, payee data

identifying the payee account, a transaction amount, and an indication of the time period during which the limited-time delayed electronic transaction should be completed;

determine if the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction based on the payer data and the payee data;

generate a limited-time delayed transaction token for the limited-time delayed electronic transaction when it is determined that the payer account and the payee account are authorised to be used for the limited-time delayed electronic transaction, wherein the limited-time delayed transaction token identifies a status of the limited-time delayed electronic transaction during the time period; and

subsequent to the generation of the limited-time delayed transaction token:

send the limited-time delayed transaction token to a payer device and a payee device;

determine if the payer account includes at least the transaction amount towards the end of the time period;

update the status of the limited-time delayed electronic transaction to an approved status when it is determined that the payer account includes at least the transaction amount towards the end of the time period, wherein the approved status indicates that the limited-time delayed electronic transaction is to be completed; and

complete the limited-time delayed electronic transaction at the end of the time period when the status is updated.

12. The apparatus according to claim 11, wherein the at least one memory and the computer program code is further configured with the at least one processor to:

delete the limited-time delayed transaction token at the end of the time period when it is determined that the transaction amount is not included in the payer account towards the end of the time period.

13. The apparatus according to claim 12, wherein the at least one memory and the computer program code is further configured with the at least one processor to:

cancel the limited-time delayed electronic transaction when the limited-time delayed transaction token is deleted by the server at the end of the time period.

14. The apparatus according to any one of claims 11, wherein the at least one memory and the computer program code is further configured with the at least one processor to:

determine if the payer account is included in a list of authorised accounts for the limited-time delayed electronic transaction, the list of authorised accounts including accounts identified by the server to be authorised to be used for the limited-time delayed electronic transaction.

15. The apparatus according to any one of claims 11, wherein the at least one memory and the computer program code is further configured with the at least one processor to:

verify the status of the limited-time delayed electronic transaction using the limited-time delayed transaction token by at least one of the payer device and the payee device within the time period.

16. The apparatus according to any one of claims 11-15, wherein the at least one memory and the computer program code is further configured with the at least one processor to:

receive a notification request from the payer device, the notification request relating to a cancellation of the limited-time delayed electronic transaction;

forward the notification request to the payee device in response to receiving the notification request; and

receive a notification response from the payee device in response to receiving the notification request, the notification response indicating whether or not the payee approves the notification request.

17. The apparatus according to claim 16, wherein the limited-time delayed electronic transaction is completed when the notification response indicates that the payee does not approve the notification request.

18. The apparatus according to any one of claims 11-17, wherein the at least one memory and the computer program code is further configured with the at least one processor to:

notify the payer device and the payee device of the status of the limited-time delayed electronic transaction at the end of the time period.

19. The apparatus according to any one of claims 11-18, wherein the time period of the limited-time delayed electronic transaction is determined by the payer.

20. The apparatus according to any one of claims 11-19, wherein the limited-time delayed transaction token of the limited-time delayed electronic transaction comprises the transaction request.

21. A computer-readable storage medium having stored thereon computer program code which when executed by a computer causes the computer to execute a method in accordance with any of claims 1 to 10.