

A COMPUTER-BASED DONATION SYSTEM

Field Of Invention

- 5 The present invention relates generally to a computer-based donation system. In particular, the invention relates to a computer-based system for facilitating the transaction of donation from a donor to a donee.

10 Background

Conventionally, donations for charitable organizations are collected using collection boxes. However, human resource is still required for the purpose of soliciting donations. Normally, volunteers make up the bulk of the required human resource. As for the non-volunteers, funds are still required to sustain them.

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Donations from donors typically pose a problem when verifying the amount of donations received. There is also a problem of accountability, as organisations collecting the donations typically do not keep a record of the details of each donor and the amount collected from the donor. Without a record of the donation, the donor is
20 unable to obtain proof so as to enjoy tax-benefits arising from the donation made. The lack of such a record also exposes the donations to manipulation and fraud.

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Secrecy is also compromised when personal information is derived from the amount of donations donated by the donor. An illustrative example is that of a donor committing to a tithe to a church. Given that the donor has to commit to a tithe of
10% of his salary, his salary is easily derived if his tithe amount is known. Privacy is also compromised when donations are openly collected in full view of fellow parishioners within a church.

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A problem with drop-in donations is that a donor is hindered from making a donation if the appropriate money denomination is unavailable. If a large donation amount is intended, the thought that the security of the donation box may be breached, may hinder the donor from acting on his intention. When the amount of donation collected

is huge, the collection and transportation of the donation from the donation locality to a consolidating locality also poses a large security risk.

Hence, this clearly affirms a need for a system for facilitating the transaction of donation from a donor to a donee.

Summary

A computer-based donation system for transaction of donations based on an embodiment of the invention, includes a facilitation system and a transaction system.

The facilitation system facilitates interaction between a user who is a donor and the computer-based donation system. The computer-based donation system also manages information that includes the identity of a donee, the amount of donation, and the account or source from which the donation is drawn. This information is provided to the transaction system that effects the transaction for the agreed amount from the donor to the donee. Information regarding the transaction is then stored within the facilitation system. The facilitation system is connected to the transaction system to synergistically form a non-repudiation system that substantially addresses donation accountability, secrecy and security.

Therefore in accordance with a first aspect of the invention, there is disclosed a method for facilitating transaction of donation comprising the steps of:

receiving into a facilitation system a user identifier specified by a user, the user identifier being associated with a payer database relating to the user, and the facilitation system being a computer-based system;

receiving into the facilitation system a transaction amount specified by the user, the transaction amount being indicative of an amount of donation to an organisation;

transmitting to a transaction system a payee account provided by the facilitation system, the payee account relating to the organisation, and the transaction system being a computer-based system;

receiving into the transaction system a payer identifier specified by the user, the payer identifier being associated with a payer account and the user identifier; and

effecting a transaction from the payer account to the payee account for the transaction amount by the transaction system,

5 wherein the facilitation system is connected to the transaction system.

In accordance with a second aspect of the invention, there is disclosed an apparatus for facilitating transaction of donation comprising:

10 a facilitation system for receiving a user identifier from a user, the user identifier being associated with a payer database relating to the user, and the facilitation system being a computer-based system;

the means for receiving into the facilitation system a transaction amount specified by the user, the transaction amount being indicative of an amount of donation to an organisation;

15 a transaction system for receiving a payee account provided by the facilitation system, the payee account relating to the organisation, and the transaction system being a computer-based system;

20 the means for receiving into the transaction system a payer identifier specified by the user, the payer identifier being associated with a payer account and the user identifier; and

the means for effecting a transaction from the payer account to the payee account for the transaction amount by the transaction system,

wherein the facilitation system is connected to the transaction system.

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Brief Description Of The Drawings

Embodiments of the invention are described hereinafter with reference to the following drawings, in which:

30 FIG. 1 is a block diagram representing a computer-based donation system;

FIG. 2 depicts a process flowchart of a method for transaction of donations using the computer-based donation system in FIG. 1;

FIG. 3 shows a data relation chart of the method for monetary transaction of FIG. 2;

FIG. 4 shows a database structure of a payer database used in the computer-based
5 donation system of FIG. 1;

FIG. 5 shows a database structure of a transaction database used in the computer-based donation system of FIG. 1 with the transaction database containing a transaction record; and
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FIG. 6 a block diagram representing the computer-based donation system of FIG 1, deployed over a network.

15 Detailed Description

A system for facilitating the transaction of donation from a donor to a donee is described hereinafter for addressing the foregoing problems.

A first embodiment of the invention, a computer-based donation system 18 is
20 described with reference to FIG. 1, which is a block diagram representing the computer-based donation system 18. The computer-based donation system 18 comprises a facilitation system 20 connected to a transaction system 22 over a communication network 23 as shown in FIG. 1. Both the facilitation system 20 and the transaction system 22 are interfaced to an interface module 24. The interface
25 module 24 may be adapted as a kiosk, a booth or the like donation terminal. The facilitation system 20, the transaction system 22 and the interface module 24 are preferably computer-based systems.

FIG. 2 shows a process flowchart of a method for transaction of donations using the
30 computer-based donation system 18. FIG. 3 shows a data relation chart of data interchange between the facilitation system 20 and the transaction system 22 of the computer-based donation system 18. With reference to FIG. 2, the operation of a donation session is described. When a user approaches the interface module 24, the

user needs to be identified to the computer-based donation system 18. The interface module 24 includes a contact-based input device 26, a first card scanner 28, an output device 30 and a printer 31 as shown in FIG. 1.

5 The contact-based input device 26 relates to keyboards, button-based consoles, touch pads and the like input devices for use by a user to enter a user identifier 32, which is stored in a database in the facilitation system 20 as shown in FIG. 3. The contact-based input device allows the facilitation system 20 to obtain the user identifier 32 in a step 100 as shown in FIG. 2. The user identifier 32 relates to a membership number
10 that has been previously issued to the user. If the user is not registered as a member to an organisation, the user's identity card number can be used to provide the user identifier 32 instead.

The first card scanner 28 relates to card readers for retrieving information from a card
15 having an embedded microchip, a bar code, a magnetic strip or the like information storage means coupled to the card. The information retrieved includes the user identifier 32. The card is either a membership card that has been previously issued with the membership number, or an identity card carried by the user.

20 The user identifier 32 relates to a payer database 34 that stores information relating to the user as shown in FIG. 3. Referring to FIG. 2, the facilitation system 20 proceeds to check the validity of the user identifier 32 provided by the user in a step 102. If the payer database 34 does not exist for a user identifier 32, the user is prompted to provide personal contact details to the facilitation system 20. Following this, the
25 facilitation system 20 proceeds to generate a payer database 34 for the user identifier 32 in a step 106.

FIG. 4 shows a database structure of the payer database 34 used in the computer-based donation system 18. For illustrative purposes, an example of data contain
30 within the payer database 34 includes the user identifier 32, a first names 36a and a family name 36b of the user, as well as addresses 36c and contact numbers 36d as shown in FIG. 4. The payer database 34 also includes the organisation identifier 42 of each charitable organisation of which the user is a member. The payer database 34

further includes but is not limited to regular donation amounts 36e donated by the user and pledged donation amounts 36f that the user has pledged to donate to the charitable organisation on a periodic basis. Such details are used by the charitable organisation for sending donation reminders to the user if the pledged donation amount 36f for a given period is defaulted. The payer database 34 also includes a fulfilled pledged amount 36g indicating an amount of the pledged donation amount 36f that the user has fulfilled to date and a last donation amount 36h donated by the user.

Once the user identifier 32 has been verified by the facilitation system 20, a transaction amount prompt (not shown) is provided to the user via the output device 30. The output device 30 is connected to the facilitation system 20 as shown in FIG. 1 and generally relates, but is not limited, to a monitor screen that is capable of displaying graphics. Alternatively, either a speaker-based device for producing sound or a tactile output generator for generating touch-based text, for example Braille, is used as the output device 30.

Upon receiving the transaction amount prompt, the user proceeds to enter a transaction amount 40 using the contact-based input device 26. The transaction amount 40 indicates the amount of donation that the user wishes to donate to a charitable organisation.

The interface module 24 is deployed to facilitate donations to one or more charitable organisation. When deployed to facilitate donations to a single organisation, the facilitation system 20 transmits an organisation identifier 42 to the transaction system 22 in response to the received transaction amount 40. The organisation identifier 42 is predefined in this case. Referring to Fig. 3, the organisation identifier 42 is associated with a payee account 44 for use by the charitable organisation to receive donations. When deployed to facilitate donations to more than one charitable organisation, the output device 30 is used by the facilitation system 20 to provide the user with information on the charitable organisations available for selection. The user then selects a charitable organisation using the contact-based input device 26 from a list of charitable organisations. Each charitable organisation on the list has an

associated organisation identifier 42. From this selection, the organisation identifier 42 is generated and transmitted to the transaction system 22.

Each organisation identifier 42 is associated with an organisation database (not shown) stored within the facilitation system 20. The organisation database contains data on the charitable organisation associated with the organisation identifier 42. The data provides information on the name, address, contact details and person-in-charge of the charitable organisation. This allows the charitable organisation to be easily contactable if problems arise during donation transaction.

The transaction system 22 is a transaction regulator for receiving and authorising transaction of funds between accounts. The transaction regulator is used by banks to serve as a transaction regulatory platform for their automated teller machines (ATM) or as a payment gateway for their electronic banking services.

Referring back to FIG. 2, the transaction system 22 transmits a payer identifier prompt (not shown) to the user by means of the output device 30, upon receipt of the transaction amount 40 and the organisation identifier 42 from the facilitation system 20 in steps 104 and 108 respectively. The interface module further includes a second card scanner 50 (FIG. 1). The payer identifier prompt requires the user to insert a payment card 48 into the second card scanner 50.

The transaction system 22 receives a payer identifier 52 when a credit-card, charge-card, NETS card or the like authorisation-based payment card 48 is scanned by the second card scanner 50. The payer identifier 52 is associated with a payer account 54 from which donation is received by the payee account 44. The payer identifier 52 is then obtained by the transaction system 22 from the second card scanner 50.

Once the payer identifier 52 has been provided to the transaction system 22 in a step 112, the user then proceeds to enter a payer authorisation code 56 into the contact-based input device 26 in a step 114. As the payer identifier 48 has an associated payer authorisation code 56 stored within the transaction system 22 (FIG. 3), the transaction system 22 receives the payer authorisation code 56 from the contact-based input

device 26 and uses the associated payer authorisation code 56 to verify the received payer authorisation code 56 in a step 116. Examples of the payer authorisation code 56 include a Personal Identification Number (PIN) used for NETS systems or a signature for credit cards.

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If the payer authorisation code 56 is verified to be correct, the transaction system 22 generates a transaction authorisation code 59 in a step 118, and proceeds to effect the payment of the transaction amount 40 from the payer account 24 into the payee account 44 in a step 120.

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Alternatively, the payment card 48 is a cash card storing an amount of electronic funds. Once the cash-card is scanned by the second card scanner 50, the transaction system 22 proceeds to check the amount of electronic funds contained therein. If the amount of electronic funds is more than the transaction amount 40, the transaction system 22 proceeds to effect the transaction of donations in the step 120. The transaction of donations includes decreasing the amount of electronic funds stored in the payment card 48 by the transaction amount 40, and increasing an amount of electronic funds stored in the payee account 44 by the same transaction amount 40 in the step 120.

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FIG. 5 shows a database structure of a transaction database 68 used in the computer-based donation system 18 of FIG. 1 with the transaction database 68 containing a transaction record 70. A charitable organisation receives numerous donations which are tracked by the transaction database 68. After each transaction, the facilitation system 22 updates the transaction database 68 with a transaction record 70 in a step 124 as shown in FIG. 2. A transaction time 64 and a transaction date 66 are also generated by the facilitation system 20 in response to each transaction. The transaction record 70 contains information on the user identifier 32, the transaction amount 40, the transaction authorisation code 59, the organisation identifier 42, the transaction time 64 and the transaction date 66 as shown in FIG. 5.

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The transaction database 68 contains information that further includes the name of the bank-card issuer, a merchant ID, an accumulative donated amount for the user and a

system audit number that are to be used when performing a transaction audit. If an error occurs during a transaction, the facilitation system 20 registers the user identifier 32, the transaction amount 40, the organisation identifier 42, the payer identifier 52 and an error comment into a transaction error database (not shown). The transaction error database is used for understanding and rectifying the transaction error that has occurred.

Referring back to FIG. 2, the facilitation system subsequently proceeds to dispense a transaction voucher 72 using the printer 31 in a step 126. The transaction voucher 72 reflects the information contained in the transaction record 70. The user uses the transaction voucher 72 to obtain tax incentives from relevant tax authorities. Information stored in the payer database 34 is preferably provided to the tax authorities to grant automatic tax incentives to the user.

In addition to the use of the payment card 48 to make a donation, the embodiment of the invention is further configured to receive cash and coins. The interface module 24 further contains an acquisition apparatus 74, as shown in FIG. 1, for receiving and counting donations of arbitrary denomination and in the form of cash and coins. The acquisition apparatus 74 generates a transaction amount 40 after the donations have been counted. The transaction amount 40 is presented to the user for verification. Once the user verifies the transaction amount 40, the transaction system 22 proceeds to effect the transaction of donations in the step 120. The transaction of donations includes increasing an amount of electronic funds stored in the payee account 44 by the same transaction amount 40 in the step 120. Alternatively, upon verification of the transaction amount 40 by the user, the donations remain in the acquisition apparatus 74. An operator of the facilitation system 20 collects the donations at a pre-determined time. Upon collection of the donations, the donations are counted and the amount of electronic funds stored in the payee account 44 is increased by the transaction amount 40 by the operator using the transaction system 22.

A second embodiment of the invention, a computer-based donation system 18 as seen in FIG. 6 comprises of three main elements: a facilitation system 20, a transaction system 22 and an interface module 24. The descriptions in relation to the system

functions and transaction relationships among the systems and devices and the procedure for facilitating a transaction between a donor and a donee described in the first embodiment of the invention with reference to FIGS. 1 to 5 are incorporated herein.

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The facilitation system 20 and the transaction system 22 are deployed over a network 98 such as the Internet, a local area network (LAN), a wide area network (WAN) or a public switched telephone network (PSTN). With reference to FIG. 6 which shows a block diagram representing the computer-based donation system 18 deployed over a network, the facilitation system 20 functions as a server to which a plurality of interface modules 24 is connected. One interface module 24 is situated at a different geographical locality from the other. The interface module 24 may be adapted as a kiosk, a booth or the like donation terminal. Alternatively, a personal computer is used as the interface module 24. The interface module 24 includes the contact-based input device 26, the first card scanner 28, the output device 30, the printer 31 or the second card scanner 50. The interface module 24 is networked to the facilitation system 20 and the transaction system 22 by a network interface.

The user is able to use any of the interface module 24 to effect a transaction from the payer account 54 to the payee account 44. Several interface modules 24 may access the facilitation system 20 at any one time. This allows several transactions to be performed simultaneously by several users. Each interface module 24 has an associated interface identifier 72 as shown in FIG. 6.

For each transaction performed in the step 122, the interface identifier 72 is transmitted from the interface module 24 to the facilitation system 20. The transaction authorisation code 59 is generated by the transaction system 22 in the step 118 as shown in FIG. 2 for each transaction. The facilitation system updates the transaction database 68 with the transaction record 70 in the step 124. The transaction record 70 includes the user identifier 32, the transaction amount 40, the organisation identifier 42, the transaction authorisation code 59, the transaction time 64, the transaction date 66 and the interface identifier 72 as shown in FIG. 5.

The facilitation system 20 contains an interface module database (not shown). The interface module database includes the name of the interface module 24, the deployed locality of the interface module 24, the interface identifier 72 and a printer paper level for the interface module 24. As the level of paper used by the printer 31 reduces with increasing number of transactions, the interface module database allows the paper used by the printer 31 of each interface module 24 to be monitored and refilled if the printer paper level falls below a pre-determined level.

In the foregoing manner, a computer-based donation system is described according to an embodiment of the invention for addressing the foregoing disadvantages of traditional methods for collecting donations. Although only two embodiments of the invention is disclosed, it will be apparent to one skilled in the art in view of this disclosure that numerous changes and/or modification can be made without departing from the scope and spirit of the invention.



Claims

1. A method for facilitating transaction of donation comprising the steps of:
receiving into a facilitation system a user identifier specified by a user,
the user identifier being associated with a payer database relating to the user,
5 and the facilitation system being a computer-based system;
receiving into the facilitation system a transaction amount specified by
the user, the transaction amount being indicative of an amount of donation to
an organisation;
transmitting to a transaction system a payee account provided by the
10 facilitation system, the payee account relating to the organisation, and the
transaction system being a computer-based system;
receiving into the transaction system a payer identifier specified by the
user, the payer identifier being associated with a payer account and the user
identifier; and
15 effecting a transaction from the payer account to the payee account for
the transaction amount by the transaction system,
wherein the facilitation system is connected to the transaction system.
2. The method as claimed in claim 1, further comprising the step of verifying the
20 user identifier.
3. The method as claimed in claim 1, further comprising the steps of:
generating a user identifier by accepting a plurality of entries from a
user; and
25 registering the plurality of entries from the user into the payer
database.
4. The method for monetary transaction as claimed in claim 1, further comprising
the steps of:
30 receiving and counting donations provided by the user, the donations
being of arbitrary denomination and one of a plurality of coins or cash;
generating a donation amount for the donations received;
verifying the donation amount by the user; and



updating the payee account with the donation amount.

5. The method for monetary transaction as claimed in claim 1, further comprising the steps of:

5 inputting into the transaction system at least one of a plurality of payer authorisation codes from the user for verifying the payer identifier and in response to the payer identifier; and

 generating a transaction authorisation code by the transaction system, the transaction authorisation code being responsive to the payer authorisation code being verified.

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6. The method for monetary transaction as claimed in claim 5, further comprising the steps of:

 generating a transaction time and a transaction date in response to the transaction;

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 generating a transaction authorisation code by the transaction system in response to the transaction; and

 updating a transaction database with a transaction record, the transaction record comprising the user identifier, the transaction amount, the transaction authorisation code, the organisation identifier, the transaction time and the transaction date.

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7. The method for monetary transaction as claimed in claim 6, further comprising the steps of:

25 dispensing a transaction voucher from the facilitation system to the user, the transaction voucher reflecting the contents of the transaction record.

8. The method for monetary transaction as claimed in claim 7, further comprising the step of:

30 providing a contact-based input device for generating the user identifier, the user interacting with the contact-based input device to generate the user identifier, and the contact-based input device being connected to the facilitation system.



9. The method for monetary transaction as claimed in claim 7, further comprising the step of:

5 providing a first card scanner for generating the user identifier, a coded medium interacting with the first card scanner to generate the user identifier, the first card scanner being connected to the facilitation system.

10. The method for monetary transaction as claimed in claim 7, further comprising the steps of:

10 providing to the user a transaction amount prompt; and
providing a contact-based input device for generating the transaction amount, the user interacting with the contact-based input device to generate the transaction amount in response to the transaction amount prompt,
15 wherein the output and contact-based input devices are connected to the facilitation system.

11. The method for monetary transaction as claimed in claim 7, further comprising the steps of:

20 providing to the user at least one of a plurality of organisations by an output device connected to the facilitation system; and
providing a contact-based input device for generating an organisation identifier, the organisation identifier being associated to the payee account, the user interacting with the contact-based input device to generate the organisation identifier, and the contact-based input device being connected to
25 the facilitation system.

12. The method for monetary transaction as claimed in claim 7, further comprising the steps of:

30 providing to the user a payer identifier prompt from the transaction system; and
providing a second card scanner for generating the payer identifier, a coded medium interacting with the second card scanner to generate the payer identifier, the second card scanner being connected to the transaction system.



13. An apparatus for facilitating transaction of donation comprising:

5 a facilitation system for receiving a user identifier from a user, the user identifier being associated with a payer database relating to the user, and the facilitation system being a computer-based system;

the means for receiving into the facilitation system a transaction amount specified by the user, the transaction amount being indicative of an amount of donation to an organisation;

10 a transaction system for receiving a payee account provided by the facilitation system, the payee account relating to the organisation, and the transaction system being a computer-based system;

the means for receiving into the transaction system a payer identifier specified by the user, the payer identifier being associated with a payer account and the user identifier; and

15 the means for effecting a transaction from the payer account to the payee account for the transaction amount by the transaction system,

wherein the facilitation system is connected to the transaction system.

14. The apparatus as claimed in claim 13, further comprising the means for
20 verifying the user identifier.

15. The apparatus as claimed in claim 13, further comprising the means for:

generating a user identifier by accepting a plurality of entries from a user; and

25 registering the plurality of entries from the user into the payer database.

16. The apparatus for monetary transaction as claimed in claim 13, further comprising:

30 an acquisition apparatus connected to the transaction system, the acquisition apparatus configured to receive and count donations, the acquisition apparatus generating a donation amount for the donations received,



the donations being of arbitrary denomination and one of a plurality of coins or cash;

the means for:

verifying the donation amount with the transaction amount; and

5 updating the payee account with the donation amount.

17. The apparatus for monetary transaction as claimed in claim 13, further comprising the means for:

10 receiving into the transaction system at least one of a plurality of payer authorisation codes from the user for verifying the payer identifier and in response to the payer identifier; and

generating a transaction authorisation code by the transaction system, the transaction authorisation code being responsive to the payer authorisation code being verified.

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18. The apparatus for monetary transaction as claimed in claim 17, further comprising the means for:

generating a transaction time and a transaction date in response to the transaction;

20 generating a transaction authorisation code by the transaction system in response to the transaction; and

25 updating a transaction database with a transaction record, the transaction record comprising the user identifier, the transaction amount, the transaction authorisation code, the organisation identifier, the transaction time and the transaction date.

19. The apparatus for monetary transaction as claimed in claim 18, further comprising a printer for dispensing a transaction voucher, the printer being connected to the facilitation system, and the transaction voucher reflecting the contents of transaction record.

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20. The apparatus for monetary transaction as claimed in claim 19, further comprising:



a contact-based input device for generating the user identifier, the user interacting with the contact-based input device to generate the user identifier, and the contact-based input device being connected to the facilitation system.

- 5 21. The apparatus for monetary transaction as claimed in claim 19, further comprising:

a first card scanner for generating the user identifier, a coded medium interacting with the first card scanner to generate the user identifier, the first card scanner being connected to the facilitation system.

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22. The apparatus for monetary transaction as claimed in claim 19, further comprising the means for:

providing to the user a transaction amount prompt by an output device;
and

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providing a contact-based input device for generating the transaction amount, the user interacting with the contact-based input device to generate the transaction amount in response to the transaction amount prompt,

wherein the output and contact-based input devices are connected to the facilitation system.

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23. The apparatus for monetary transaction as claimed in claim 19, further comprising:

an output device for providing to the user at least one of a plurality of organisations, the output device being connected to the facilitation system; and

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a contact-based input device for generating an organisation identifier, the organisation identifier being associated to the payee account, the user interacting with the contact-based input device to generate the organisation identifier, and the contact-based input device being connected to the facilitation system.

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24. The apparatus for monetary transaction as claimed in claim 19, further comprising:



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the means for transmitting a payer identifier prompt from the transaction system to the facilitation system; and

an output device for providing the payer identifier prompt to the user, the output device being connected to the facilitation system.

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25. The apparatus for monetary transaction as claimed in claim 24, further comprising:

a second card scanner for generating the payer identifier, a coded medium interacting with the first card scanner to generate the payer identifier, the second card scanner being connected to the transaction system.

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