

**METHODS, SYSTEMS AND SOFTWARE PLATFORM FOR FACILITATING
CHARITABLE DONATION PAYMENTS WITHIN ONE OR MORE DIGITAL
DONATION DEVICES**

TECHNICAL FIELD

[0001] The present invention relates to a device or system for processing and collecting charity donations. More particularly, the present disclosure relates to methods, systems, and software platform for facilitating charity donation payments with a digital donation device including but not limited to a Point of Sale (POS) payment device.

BACKGROUND

[0002] Charities and religious organisations are finding it challenging to keep pace with the ever-increasing demand for donations. The funding gap continues to broaden in light of large cash outlays required to provide instant relief in times of environmental and humanitarian crisis. Furthermore, the reduction of cash usage and shift to cashless societies within the global economy presents numerous challenges for charities and religious organisations. Typically, these organisations collect donations through traditional methods and the majority of these organisations are yet to embark on significant digital transformation.

[0003] Avenues for income generation via donations are quite limited for charities and religious organisations with options including cash collection boxes, web-based donations, telemarketing campaigns, fundraising events or engaging collection agencies. These forms of donations require a high degree of human intervention which carries with it higher operating costs. The cost of collecting donations rises further with the involvement of collection agencies as they charge charities a percentage-based commission for their services.

[0004] Many people hold the perception that a large proportion of their donation is not ultimately received by the charitable cause it was intended for and criticise the lack of transparency into the allocation of their funds.

[0005] The best opportunity that can help charities and religious organisations overcome these challenges is Technology. Charity and religious leaders think technology will help them to innovate and find new ways to do more good within their causes and communities however believe technology will change the nature of the problems they have address. While people are generally generous in nature, charities struggle to provide in-depth engagement with donors due to a lack of transparency and engagement. Donor engagement has continued to be through traditional communication methods such as paper-based and electronic mail. Historically, there has been low adoption of digital technology within the charitable and religious sectors.

[0006] As per Charity Landscape 2019 from the Charities Aid Foundation (Reference: https://www.cafonline.org/docs/default-source/about-us-publications/charity-landscape-views-from-charity_leaders-web.pdf), the obstacles and opportunities facing charity leaders are as follows.

[0007] Challenges: Income generation remains the number one challenge for organizations, followed by meeting the demand for services and reductions in funding.

[0008] Technology: Charity leaders see technology as a double-edged sword – nearly all think that technology will help them to innovate and find new ways to do good, but nearly three quarters believe that technology will change the nature of the problems that charities have to address.

[0009] Public trust: Most charity leaders think that the sector has been badly impacted by negative media coverage and that people do not understand the importance of charities.

[0010] US Patent Application No. US20140136300 discloses a method or process for merchant incentivizes an account holder to make an authorized transaction by terms and agreement to auditably donate to the account holder's affinity entity. In the process, the merchant's terms may limit its donation by a derivation of navigation time between account holder and merchant, and/or by date and time of the transaction. The account holder can direct the donation to one of more affinity entities within their own community, and/or within a community where the transaction was physically conducted. An account holder can also donate at the time of transaction where the donation is paid by the account's issuer for reimbursement as a debit to the account holder's account statement. However, this prior art is not as flexible and scalable to de use in other environments such as in an event or at a worshipping place.

[0011] US Patent Application No. US20140279408 discloses a charitable donation system that facilitates and monitors charitable donation based on payment card loyalty contributions is disclosed. A simple web-based tool that allows people to join as members, authorize their loyalty contributions offered by payment card companies to be used for charitable donations, and to select which charity the member chooses to receive the loyalty contributions. The loyalty contributions are provided to the member-selected charity in the form of a pre-paid debit card which may only be used for direct, authorized purchases. The charitable donation system monitors and analyses the charity's purchases and provides purchase information associated with the charity's purchase to the member. The charitable donation system provides a potentially, long-term stream of contributions which may continue indefinitely without further member involvement. However, this prior art is not as flexible and scalable to de use in different environments.

[0012] US Patent Application No. 20050021353 discloses an automatic bill payment enrolment system for recurring donations, which allows donors to automatically charge charitable donations on a recurring basis to a financial account. In one embodiment, the invention uses a donation portal having various webpages to allow a donor to donate to all U.S. 501(c)(3) organizations. In an alternative embodiment, a donor may donate to any other desired organizations. The system may also incorporate a filter

for restricting monies being sent to terrorist organizations. The invention also includes a loyalty point system, wherein loyalty points may be donated to a charity. In another exemplary embodiment, the invention also facilitates employee gift matching. However, this prior art is not as flexible and scalable to be used in different environments.

[0013] Any discussion of the prior art throughout the specification should in no way be considered as an admission that such prior art is widely known or forms part of common general knowledge in the field.

SUMMARY

Problems to be Solved

[0014] It may be an object of the present invention to provide a device and system for processing and collecting donations through a digital process.

[0015] It may be an object of the present invention to provide a device and system for the management of donations, donors, appeals/campaigns, devices, and charity/religious organisations and the centralised storage of donor's information.

[0016] An object of the present invention is to provide a device or system to enrich global communities by modernising charitable fundraising to foster giving and generosity between donors and charities.

[0017] An object of the present invention is to provide a trusted payment platform for frictionless, transparent and engaged giving.

[0018] An object of the present invention is to provide a device or system that accepts donations which are cashless and frictionless and in particular being part of daily life. Anyone can easily donate when they want conveniently.

[0019] It is an object of the present invention to overcome or ameliorate at least one of the disadvantages of the prior art and conventional fundraising methods, or to provide a useful alternative.

Means for solving the Problem

[0020] A first aspect of the present invention may relate to a donation system comprising:

- one or more donation devices for receiving one or more electronic assets or payments from a donor;

- a server connects to the donation devices for conducting near real-time transactions or peer-to-peer transactions with the electronic assets or payments and registers the electronic assets or payments to a database;

- wherein the server is adapted to exchange the electronic assets or payments for electronic funding and deposit the electronic funding into a bank account of a charity or religious organisation.

[0021] Preferably, the donation device comprises a handheld device adapted to execute an application built to communicate with the server.

[0022] Preferably, the handheld device may be a smart device such as a smartphone or a tablet.

[0023] Preferably, the application is a mobile application built with Native Android (Java), Native iOS (Swift) or Mobile Inoperable Hybrid Technology such as React.Native.

[0024] Preferably, the donation device is adapted to execute a POS terminal application for donation transactions and communication with the server 16.

[0025] Preferably, the application is an Android based POS terminal application built with Native Android (Java) or Embedded Android (Java).

[0026] Preferably, the server is adapted to provide a web back-end engine using serverless Application Programming Interfaces (APIs) built in DotNet C# technology.

[0027] Preferably, the server is adapted to render, present and connect an administrator web portal interoperable and accessible from an internet web browser.

[0028] Preferably, the web portal 14 comprises a web user Interface with back-end logical code for allowing a user to control the server and the donation devices.

[0029] Preferably, the web interface is built with React.JS and serverless web APIs built in DotNet C# technology.

[0030] Preferably, the web interface may also provide a front-end mobile responsive web interface built in React.JS framework.

[0031] Preferably, the web application is deployed on another cloud server, such as Amazon Web Services (AWS) EC2 Server Instances.

[0032] Preferably, the server provides a user web portal having a web interface to allow a donor to access an electronic receipt.

[0033] Preferably, the user web portal is also adapted to send the electronic receipt to the user through a short message service or an electronic mail.

[0034] Preferably, the server is adapted to communicate with administrator web portals or user web portals through a secure socket layer protocol.

[0035] Preferably, the donation device is adapted to receive identification data of a user or donor.

[0036] Preferably, the donation device may scan the biometric information from a donor for identification.

[0037] Preferably, the donation device is adapted to connect to an identification server or identification service to obtain donor data.

[0038] Preferably, the server is adapted to provide one or more secured channels to communicate with the donation device, donor device, identification server or service and financial institutions.

[0039] Preferably, one of the secured channels is an encrypted channel using one or more encryption keys stored in secured storage of the server.

[0040] Preferably, the encryption algorithm is 256 bits RSA cryptography.

[0041] Preferably, the server is adapted to store the donor data or user demographic data and transaction data segregated and encrypted in individual de-identified storage, with dual layers of encryption, for example AWS RDS encryption along with AES 256 data encryption.

[0042] Preferably, the storage is relational database storage.

[0043] Preferably, the relational database is implemented as a cloud service,

[0044] Preferably, the relational database comprises AWS Aurora MYSQL databases deployed on Encrypted RDS servers with 2 bifurcated RDS database instances for secure de-identified data storage methods.

[0045] Preferably, the donation device and the server have an ultra-safe security processor comprising of a device kiosk mode whereby only one application may operate at any given time. The device may be remotely commanded by the server and would not

allow any user to enter the device settings or operate other third-party applications on the donation device.

[0046] Preferably, the donation device and the server have an ultra-safe security processor that may enforce the use of encrypted certificates for secure system boots and device identification. The donation device and server may exchange and access data using an API gateway authorisation with JWT tokenisation.

[0047] Preferably, the ultra-safe security processor may also include random number generators and all the hardware blocks needed to generate keys not available or accessible to the user software.

[0048] Preferably, the donation device and the service are adapted to support software level and hardware level encryption, such as RSA, AES, 3DES Micro, etc.

[0049] Preferably, the donation device comprises a processor.

[0050] Preferably, the processor may be a 64bits advanced RISC microprocessor such as ARM Cortex-A53.

[0051] Preferably, the donation device 100, 200 has a Near Field Communication (NFC) module to provide contactless communication with other NFC devices for electronic payment.

[0052] Preferably, the donation device comprises a high-speed interface to receive one or more removable storage media or flash memory such as an SD card.

[0053] Preferably, the device is adapted to provide a pin transaction security module that is capable of carrying out secure reading and exchange of data.

[0054] Preferably, the exchange is adapted to comply with Payment Card Industry (PCI) PTS 5.x, SRED guidelines.

[0055] Preferably, the donation device comprises one or more modems for communicating the data to a server.

[0056] Preferably, one of the modems is a WIFI modem for communicate with a local network.

[0057] Preferably, one of the modems is a cellular network modem in which the donation device is adapted to communicate with the server of the system via cellular networks.

[0058] Preferably, the donation device 100, 200 comprises a touch screen.

[0059] Preferably, the donation device may comprise a keypad.

[0060] In the context of the present invention, the words “comprise”, “comprising” and the like are to be construed in their inclusive, as opposed to their exclusive, sense, that is in the sense of “including, but not limited to”.

[0061] The invention is to be interpreted with reference to the at least one of the technical problems described or affiliated with the background art. The present aims to solve or ameliorate at least one of the technical problems and this may result in one or more advantageous effects as defined by this specification and described in detail with reference to the preferred embodiments of the present invention.

BRIEF DESCRIPTION OF THE FIGURES

[0062] Figure 1 schematic diagram of a donation system according to an embodiment of the present invention;

[0063] Figure 2 schematic diagram of a donation device in the donation system of Figure 1;

[0064] Figure 3 schematic diagram of another donation device in the donation system of Figure 1;

[0065] Figure 4 schematic flow diagram of a donation process of an application implemented in a donation device of the donation system of Figure 1;

[0066] Figure 5 schematic flow diagram of a purchase process of an application implemented in a donation device of the donation system of Figure 1;

[0067] Figure 6 a high-level Architecture diagram describing the donation system of Figure 1;

[0068] Figure 7 is a use case diagram showing an application implemented on a handheld device such as a smart device such as a smartphone or a tablet in an embodiment of the donation system of Figure 1;

[0069] Figure 8 is a use case diagram showing another application implemented on a donation device in the form of a POS payment device in an embodiment of the donation system of Figure 1;

[0070] Figure 9 schematic diagram of an architecture of donation system of Figure 1;

[0071] Figure 10 schematic flow diagram of user login / signup process using single sign-on (SSO) of the donation system of Figure 1;

[0072] Figure 11 schematic Sequence diagram of the campaign and appeal sync process of the donation system of Figure 1;

[0073] Figure 12 schematic flow diagram of post donation notification of the donation system of Figure 1; and

[0074] Figure 13 schematic flow diagram of a reporting process of the donation system of Figure 1.

[0075] Figure 14 schematic flow diagram of a donation payment process of the donation system of Figure 1.

DESCRIPTION OF THE INVENTION

[0076] Preferred embodiments of the invention will now be described with reference to the accompanying drawings and non-limiting examples.

[0077] In one embodiment of the present invention as shown in Figure 1, there is provided a donation system 10 comprising:

- one or more donation devices 100, 200 for receiving one or more electronic assets from a donor 12;

- a server 16 connects to the donation device 100, 200 for conducting near real-time transactions or peer-to-peer transactions with the electronic assets or payments and registered the electronic assets or payments to a database 24;

- wherein the server 16 is adapted to exchange the electronic assets or payments for electronic funding and deposit the electronic funding into a bank account of a charity or religious organisation.

[0078] In one embodiment, the donation device 100 as shown in Figure 2 comprises a handheld device adapted to execute an application built to communicate with the server 16. The handheld device may be a smart device such as a smartphone or a tablet. In one embodiment, the application is a mobile application built with Android (Java), Native iOS (Swift) or Mobile Inoperable Hybrid Technology such as React.Native.

[0079] In another embodiment, the donation device 200 as shown in Figure 3 is adapted to execute a POS terminal application for donation transactions and communication with the server 16. In one embodiment, the application is an Android based POS terminal application built with Native Android (Java) or Embedded Android (Java).

[0080] The server 16 may provide a web backend engine using serverless Application Programming Interfaces (APIs) built in DotNet C# technology.

[0081] In another embodiment, the server 16 is adapted to render, present and connect to a web portal 14 interoperable and accessible from an internet web browser. The web portal 14 comprises a web user Interface with back-end logical code for the administrator to control the donation system 10. Preferably, the web interface is built with React.JS and serverless web APIs built in DotNet C# technology. The web interface may also provide a front-end mobile responsive web interface built in React.JS framework. In one embodiment, this web application is deployed on another cloud server, such as Amazon Web Services EC2 Server Instances.

[0082] In a preferred embodiment, the server 16 provides a user web portal 300 having a web interface to allow a donor to access an electronic receipt. The web portal is also adapted to send the electronic receipt to the user through a short message service or an electronic mail.

[0083] Preferably, the web portal 14 and the user web portal 300 are accessible through the secure socket layer protocol.

[0084] In one embodiment, the donation device 100, 200 is adapted to receive an identification data of a user. The donation device 100, 200 may scan the biometric information from a donor for identification, or a donor may scan a quick response (QR) code displayed on the donation device 100, 200 for identification. The donation device 100, 200 may connect to an identification server or identification service 18 to obtain donor data.

[0085] In one embodiment, the server is adapted to provide one or more secured channels to communicate with the donation device 100, 200, the banks 20 and donation identification server or service 18.

[0086] One of the secured channels is an encrypted channel using encryption keys stored in a secured storage of the server. In one embodiment, the encryption algorithm is 256 bits RSA cryptography.

[0087] In one embodiment, the server 16 is adapted to store the donor data or user demographic data and transaction data segregated and encrypted in individual de-identified storage 22, 24. In one embodiment, the storage 22, 24 is relational database storage. Preferable the relational database is implemented as a cloud service, such as the AWS Aurora MYSQL databases deployed on RDS servers with 2 bifurcated RDS database instances for secure de-identified data storage methods with dual layers of encryption.

[0088] Referring to Figure 1, User data in the GivePlease application of the system 10 is passed to the server using 3 different ways:

- (a) GivePlease API;
- (b) Identification Verification Server API; and
- (c) Using the SMS/Email URL.

[0089] In relation to the GivePlease API:

- (a) Donors or users following a donation payment will be able to enter their details such as Name, Email, Mobile Number, Identity number. These manual entries are passed to the application server using a secured API gateway.
- (b) The API communication between the GivePlease App and server 16 (in one embodiment, the server 16 is an Amazon EC2 server) is encrypted

using the SSL (Secure Socket Layer) cryptography protocol, along with JWT tokenisation.

- (c) Data transferred are being encrypted using the RSA encryption algorithm. Once data is received to the application it is stored into the RDS database server.

[0090] In relation to the Identification Verification Server 18:

- (a) GivePlease application generates a QR code using an Identification Verification Server API which can be scanned by users to provide their details.
- (b) User needs to open their Digital Identity application on their smart phone and scan from GivePlease application.
- (c) Once scanned the Identification Verification Server provides the user details using secure webhooks to the GivePlease application server.
- (d) Identification Verification server 18 provides that encrypted data to the server 16 which is then decrypted by the backend server to fetch the details and store it securely in the RDS instance.

[0091] Using the SMS /Email uniform resource locator (URL):

- (a) If the user or donor has not provided their details by entering their details manually or using the Identification Verification QR code, they may enter their mobile number in the GivePlease application and this is communicated to server 16 to send a donation receipt via short message service (SMS).
- (b) This SMS contains the receipt of the donation along with a URL to enter the donor details.
- (c) Using this URL, the donor or user would be able to access the web page in an internet browser and they can enter their details and send it to the server 16, these donor details are encrypted using the RSA encryption algorithm.

- (d) The API communication between the server 16 and the web portal 14 is encrypted using the SSL (Secure Socket Layer) cryptography protocol.

[0092] In one embodiment, the GivePlease back-end server application is using the RDS (Relation Database Service) servers 22, 24. Both database servers 22, 24 hold different data and are linked securely using a uniquely generated ID.

- (a) Transaction database server 24: This server holds only the transaction data of all the donations made using the application.
- (b) User database server 22: This server holds details of all the donors and users in the system, this database keeps all the records in an encrypted format using the RSA encryption algorithm.

[0093] Charity or Religious Organisation will be provided with a Web Admin portal 14 to view details of all the donations and users from the backend server. Users will be provided with Admin credentials which can only be generated from the backend server.

[0094] All the details fetched from the backend server 16 will be done using a secured SSL connection and RSA encryption algorithm.

[0095] Referring to Figure 2, there is provide a schematic diagram of a donation device 100. Referring to Figure 3, there is provide a schematic diagram of a donation device 200. The donation device 100, 200 is adapted to run the application-based solution for Charity and Religious Organisations. The donation device 100, 200 is adapted to:

- Reduce infrastructure costs by implementing PCI compliant mobile payment solutions for Charity and Religious Organisations.
- Improve payment efficiencies.
- Reduce transaction costs.
- Provide a single platform that operates all cities or globally.
- Enable Real-time Domestic and International payments.
- Reduce administrative work, manual data entries, and time-consuming reconciliations.

- Increase donor comfort and ensure the security of donor data.

[0096] In one embodiment, the donation device 100, 200 and the server 16 have an ultra-safe security processor. In one embodiment, the ultra-safe security processor may have a dedicated computer-on-a-chip or microprocessor for carrying out cryptographic operations. The ultra-safe security processor may be embedded with multiple physical security measures such that the ultra-safe security processor is tamper resistant. In another embodiment, the ultra-safe security processor comprises secured hardware cryptography key module such that security keys are never exposed outside of the hardware environment. The ultra-safe security processor in the donation device 100, 200 and the server 16 may enforce the use of encrypted certificates for secure system boots and device identification. The donation device 100, 200 and server 16 may exchange and access data using an API gateway authorisation with JWT tokenisation.

[0097] The ultra-safe security processor may also include random number generators and all the hardware blocks needed to generate keys not available or accessible to the user software. The ultra-safe security processor may provide e-fuse settings to control the state of the blocks to prevent tampering through their manufacturing and life cycle. The donation device 100, 200 and the service 16 are adapted to support software level and hardware level encryption, such as RSA, AES, 3DES Micro, etc.

[0098] The donation device 100, 200 and the server 16 have an ultra-safe security processor comprising of a device kiosk mode whereby only one application may operate at any given time. The device may be remotely commanded by the server and would not allow any user to enter the device settings or operate other third-party applications on the donation device.

[0099] In one embodiment, the donation device 100, 200 comprises a processor. The processor may be a 64bits advanced RISC microprocessor such as ARM Cortex-A53.

[00100] The donation device 100, 200 has a Near Field Communication (NFC) module to provide contactless communication with other NFC devices for electronic payment.

[00101] Preferably, the donation device 100, 200 comprises a high-speed interface to receive one or more removable storage media or flash memory such as an SD card. In one embodiment, the device 100, 200 is adapted to provide a pin transaction security module that is capable of carrying out secure reading and exchange of data. Preferably, such that exchange is adapted to comply with Payment Card Industry (PCI) PTS 5.x, SRED guidelines.

[00102] In another embodiment, the donation device 100, 200 comprises one or more modems for communicating the data to a server. One of the modems may be a WIFI modem for communicate with a local network. In another embodiment, the modem is a cellular network modem in which the donation device 100, 200 is adapted to communicate with the server of the system via cellular networks.

[00103] Preferably, the donation device 100, 200 comprises a touch screen. In one embodiment, the donation device 100, 200 comprises a keypad. In another embodiment, the donation device 100, 200 comprises one or more Camera and/or Scanners for scanning images, barcodes, or carry out facial recognition. Further, the donation device 100, 200 may comprise an in-display 2D / 3D fingerprints scanner for reading fingerprints from the touchscreen.

[00104] The system 10 is adapted to provide potential donors with new opportunities to make donations. For charity and religious organisations, it will improve engagement with existing and potential donors, as well as reduce the costs of fund raising activities. The system 10 aims to empower charity and religious organisations through increased access to donation funding, and lower operating costs, to help them directly improve the lives of the world's disadvantaged.

[00105] The system 10 is adapted to be accessible to different user types, based on the hardware which the users are interacting with and their roles. In one embodiment of the invention, the system 10 is adapted to provide a donation device access and another through a web interface. The donation device 100, 200 in Figure 1 and the E-Donation website 300 in Figure 9 will be used to facilitate the processing of donation payments from donors. Charity and religious organisations will have access to a web portal that allow them to review the donations received and provide them with the ability to encourage donations via push-based notifications, in-app content, appeals / campaigns and periodic updates. The overall architecture of the system 10 as shown in Figure 1 and Figure 9 will be based on the model, view, controller design pattern which is bundled in a way that data is decoupled from the business logic and the data is communicated through the appropriate channel and can be secured by the use of different types of encryptions.

[00106] In one embodiment of the present invention, provides a donation device 100, 200 being a donation point-of-sale application-based device. The donation device 100, 200 is adapted to implement PCI compliant mobile payment solutions for charity and religious organisations. The donation device 100, 200 is able to improve payment efficiencies and reduce transaction costs.

[00107] The donation device 100, 200 is adapted to provide a single platform that operates globally and able to process domestic and international payments for charitable and religious donations. It can reduce administrative work, manual data entries, and time-consuming reconciliations, increase donor comfort, and ensure the security of donor data.

[00108] The donation device 200 or system 10 of an embodiment of the present invention is adapted to serve two types of Stakeholders namely:

- POS User: The end-users (Donor) who will use the platform to donate or purchase from the preferred charity or religious organisation.
- Charity or Religious Organisation: The users will be using the platform to manage and view their donations, donors, appeals/campaigns,

terminals (Devices) reports, system users, reports and account settlements.

[00109] The donation device 200 or system 10 will provide the following features:

- Donation: Enable the end-user (Donors) to donate to a selected partnered charity or religious organisation as a one-off or recurring donation.
- Purchase: Enable the end-user (Donors) to make a purchase and can then round up the purchase amount to \$1, \$5, \$10 so the round-up amount can be donated to the charity or religious organisation.
- Print Donation/Purchase Receipt: Enable the end-users (Donors) to get a printed receipt for their donation/purchase. The receipt will be printed once the end-users (Donor) make the donation/purchase in the application.
- Appeals/Campaigns: Enable the end-users (Donors) to link their donation amount to an appeal or campaign which are created by the charity or religious organisation.
- Transaction: Enable the user (charity or religious organisation) to view all transactions and donations and purchase history of the end-users (Donors).
- Refund: Enable the user (charity or religious organisation) to Resend the amount of the donation and purchase of the end-users (Donors).
- View Device Info: Enable the user (charity or religious organisation) to view the device information which includes basic details such as Device Name, IMEI Number, Model Name, Android Version, and Serial Number.
- About Us: Enable the users (charity or religious organisations) to view the about us content in the application.
- Terms and Conditions: Enable the users (Donors) to view the about us content in the application.

- Notification: Push Notification will be sent to POS payment devices for taking various action in application to reduce manual interaction.

[00110] Referring to Figure 8, it provides a use case for the donation device 200 and the POS payment device application of an embodiment of the device or system 10 of the present invention.

[00111] Referring to Figure 4, it provides a donation process 250. When the donation device 200 triggers the donation process 250, the donation process will initiate a starting step 251. The donation device 200 will then prompt the user to enter the donation amount in step 252. After receiving the amount, the donation device 200 will prompt the user to select the donation frequency. The user can select either a one-off donation in step 254 or a recurrent donation frequency such as weekly, fortnightly, monthly, quarterly or yearly in 256.

[00112] Then, the donation device 200 will ask the user to tap, swipe, or insert the payment in step 258. In one embodiment, the donation device 200 has similar hardware as the device 100. It may receive the payment through NFC communication with a credit or debit bank card or mobile device. The donation device 200 may also scan a payment barcode or QR code for payment from the user's electronic wallet or may also present a payment barcode or QR code on the screen for the user to scan with their mobile device to make a payment from the user's electronic wallet. In another form of donation, the user may enter a code for the device to obtain an electronic asset or payment from another platform.

[00113] In the next step 260, the donation device 200 will examine the donation frequency status entered or selected previously in steps 254, 256. If the donation frequency is set to recurrent in step 256, the donation device 200 will seek and verify the security code (CVV/CVC) from the user in step 262. If donation frequency is set to one-off in step 254, or the secured code is verified in 262, the donation device 200 will then process the payment in step 265.

[00114] The payment process 265 may be dealt with internally with the server 16 of the system 10, or through a financial institution such as a payment processing bank 20. The donation device 200 will then check whether the payment is completed in step 266. If the payment is incomplete, the donation device 200 will jump back to step 258. Otherwise, the donation device 200 will move to step 268 to check whether the donor is a new donor. The device 200 will check server 16 and the donor database 22 in Figure 1 to determine whether the donor record exists. If the payment token of the user's credit or debit bank card, electronic wallet or mobile device from the donor database 22 is the same, the donor already exists and the donation device 200 will proceed to step 274.

[00115] If there is no donor record, the donation device 200 will present to the user to enrol either by enrol the donor manually 270 or through the user scanning the QR code 271a presented on the donation device 200. In step 270 the user may enter the donor information such as their mobile number, email, name and identity number to the donation device 200. In step 271a, the donation device 200 presents on screen a unique QR code, whereby the user can scan with their mobile device. In step 271b, the user's mobile device upon scanning the QR code will launch a third-party digital identity application to confirm and verify their identification. Upon the user confirming their identity on their mobile device, the identification server 18 in Figure 1 sends the donor's information to server 16 in Figure 1 such as their name, mobile number, email, address, date of birth, identity number, among other data. The donation device 200 is adapted to communicate through server 16 in Figure 1 to fetch this donor information from a third-party identification server, service or database 18 in Figure 1. In step 272, this donor data is then saved as a donor record in the donor database 22 in Figure 1.

[00116] Then, the donation device 200 will prompt users to select an appeal / campaign in step 274. If the donor wants to select an appeal / campaign, the donation device 200 will display the appeal options for the user to select in step 276.

[00117] If the donor does not wish to select a particular appeal / campaign in step 274, or after the user selected an appeal in step 276, the donation process 250 will end in step 278. The donation device 200 will then return to the ready mode for the next trigger.

[00118] Referring to Figure 5, it provides a purchase process 280. When the donation device 200 triggers the donation process 280, the donation process will initiate a starting step 281.

[00119] The donation device 200 will then prompt the user to enter the purchase amount in step 282. The purchase amount is the amount of money of the purchased goods and services either from the charity or religious organisation or from a third party such as a merchant. In one embodiment, the donation device 200 may be integrated with a POS system and fetches the purchase amount from the POS system. In another embodiment, the donation device 200 may be integrated with a sale system of goods and services from the asset pool of another party. As such, a user may donate an electronic asset, such as NFT or cryptocurrency, and another user may purchase such an asset from the system 10. The donation device 200 will then fetch the purchase price from the sale system.

[00120] After the device enable the end-user (Donors) to make the purchase in step 282 and the donation device 200 can round up the purchase amount to a \$1, \$5, or \$10 increment so the round-up amount can be donated to a charity or religious organisation in step 284a, 284b and 284c. The donation device can also allow the donor to enter a custom donation amount to be donated a charity or religious organisation in step 284d.

[00121] Then, the donation device 200 will calculate the final purchase price based on both the purchase amount and the donation amount and display the final price along with other payment details on the donation device 200 in Step 285. The user may then proceed or amend the payment details.

[00122] The donation device 200 will ask the user to tap, swipe, or insert the payment in step 286. In one embodiment, the donation device 200 has similar hardware as the device 100. It may receive the payment through NFC communication with a credit or debit bank card or mobile device. The donation device 200 may also scan a payment barcode or QR code for payment from the user's electronic wallet or may also present a payment barcode or QR code on the screen for the user to scan with their mobile device

to make a payment from the user's electronic wallet. In another form of donation, the user may enter a code for the device to obtain an electronic asset or payment from another platform.

[00123] The payment process 288 may be dealt with internally with the server 16 of the system 10, or through a financial institution such as a payment processing bank 20. The donation device 200 will then check whether the payment is completed in step 290. If the payment is incomplete, the donation device 200 will jump back to step 286. Otherwise, the donation device 200 will move to step 292 to check whether the donor is a new donor. The device 200 will check server 16 and the donor database 22 in Figure 1 to determine whether the donor record exists. If the payment token of the user's credit or debit bank card, electronic wallet or mobile device from the donor database 22 is the same, the donor already exists and the donation device 200 will proceed to step 298.

[00124] If there is no donor record, the donation device 200 will present to the user to enrol either by enrol the donor manually 294 or through the user scanning the QR code 295a presented on the donation device 200. In step 294 the user may enter the donor information such as their mobile number, email, name and identity number to the donation device 200. In step 295a, the donation device 200 presents on screen a unique QR code, whereby the user can scan with their mobile device. In step 295b, the user's mobile device upon scanning the QR code will launch a third-party digital identity application to confirm and verify their identification. Upon the user confirming their identity on their mobile device, the identification server 18 in Figure 1 sends the donor's information to server 16 in Figure 1 such as their name, mobile number, email, address, date of birth, identity number, among other data. The donation device 200 is adapted to communicate through server 16 in Figure 1 to fetch this donor information from a third-party identification server, service or database 18 in Figure 1. In step 296, this donor data is then saved as a donor record in the donor database 22 in Figure 1. Then the purchase process 280 will end in 298. The donation device 200 will then return to the ready mode for the next trigger.

[00125] Referring to Figure 6 and Figure 7, the application of an embodiment of the device or system 10 of the present invention has three types of Stakeholders namely:

- Mobile App User: Will use the platform to donate to a charity or religious organisation.
- Admin: Will use the platform to view and manage all onboarded charity and religious organisations, donation devices, system configurations and settings and App Users.
- Charity or Religious Organisation: Will use the platform to view and manage one-off and recurring donations, refunds, donors, appeals/campaigns, reports, and account settlement.

[00126] The system 10 of the present invention has two main interfaces:

- Mobile Application to run on a donation device 100, 200: The mobile applications will be developed on both Android and iOS platforms which will be used by the end App user such as Donors and Charitable or Religious Organisation staff.
- User web portal 300 or donor web portal 300 or e-donation platform 300: The web platform will be accessible to two types of users - 1. Administrator 2. Charitable and Religious Organisations 3. Donors.

[00127] The device or system 10 of the present invention will provide the following features:

- Donation: Enable the end-user to donate to a preferred charity or religious organisation.
- Bank Transaction Management (User): Enable the end-user to view all their bank/card transaction history and round up their everyday transactions to donate the rounded up amount to a charity or religious organisation.
- News Feed Management: The charity or religious organisations will be able to add news and send notifications to the end-user.

- Transaction Management (Charity): The charity or religious organisation can view the total donations they have received.
- Charity Management: Admin can add, edit or remove charities or religious organisation.
- Appeal / Campaign Management: The charity or religious organisation can add appeals or campaigns to raise donations for specific causes.
- Reports: Admin and charity or religious organisations will be able to view dynamic reports related to app usage, donations received, donation categories and time-series comparisons.
- Cause Management: Admin can add, edit and remove causes and assign them to a selected charity or religious organisation.
- Account Settlement Management: Donated amount should be automatically settled into the accounts of the charity or religious organisation based on specific settlement rules and time-bound triggers.
- Notification Management: custom push notification messaging sent to donors through push notifications, SMS or email based on charity or religious organisations a donor has marked as a favourite, donated to previously, or causes they have supported.
- Donation Tier Management: Multiple donation tiers and associated benefits specific to charity or religious organisations to allow donors to reach tiers based on donation history to avail respective benefits.
- Platform CMS: Charity or religious organisation users to modify the contents such as images, video and text of the respective E-Donation platform then displayed to donor users.
- Device Management: Admin can manage and set parameters for multiple donation devices 100, 200 and manage the deployment of applications to donation devices 100, 200 and the content displayed within the applications.
- Recurring Payment Management: Automatically trigger the deduction of a donation payment using the storage token of the donor's credit or debit bank card based on their recurring donation selection.

- Donor Management: Charity or Religious organisation users can view and manage a donor's information, their recurring payments, stored payment methods and process payments refunds.
- Purchase Management: Charity or Religious organisation users can manage and view reports of purchases and round-up donations.

[00128] The device or system 10 will be secured using multiple security channels:

- SSL Encryption: SSL (Secure Sockets Layer) is the standard security technology for establishing an encrypted link between a web server and the client. This link ensures that all data passed between the web server and the client remains private and integral.
- AES Encryption: Advanced Encryption Standard, or AES, is a symmetric block cipher used to protect classified information and is implemented in the software to encrypt sensitive data.
- AWS Encryption: Amazon Web Services (AWS) RDS encrypted DB instances use industry standard AES-256 encryption algorithm to encrypt data on the database server. AWS RDS handles authentication of access and decryption of data transparently with a minimal impact on performance.

[00129] Donor, Transaction and Charity or Religious Organisation Data will be securely stored on the Cloud Database Server using AES encryption.

[00130] In one embodiment, the server 16 comprises an application programming interfaces (API) manager which will access the data from the Cloud Database Server 22, 24 and provide it to all types of users using SSL secured connections and JWT authentication. The types of APIs will be as follows:

- Donation API
- Appeal / Campaign API
- Cause API
- Transaction Summary API

- News Feed API
- Recurring API
- Purchase API
- Charity / Religious Organisation API
- Reports API
- Settlement API
- Dashboard API
- Notification API
- Device Management API
- CMS API

[00131] In one embodiment of the present invention, there is provided an online donation system 10 that provides a new digital channel for charitable or religious organisations to engage with donors. The application implemented in the system 10 is adapted to provide greater exposure to charitable or religious organisations and their causes through the intuitive interface of an application. The system 10 of the present invention will create new opportunities for users to make regular and one-off donations to charitable or religious organisations of their choice and enjoy greater visibility over the use of their funds. The system 10 can reduce the operating costs associated with the collection of funds by minimising the extent of human intervention in the process of raising donations. The GivePlease Platform embraces a mobile-first approach whereby it provides an engaged digital marketplace between donors and charitable or religious organisations.

[00132] At its core of the system 10 of the present invention, provided is an online donation platform for charitable or religious organisations offering multiple ways in which users are able to make one-off or recurring donations. Users of the system 10 of the present invention will be able to choose which charitable or religious organisations or appeal / campaign they would like to make donations to, as well as receive ongoing

updates and engage with these charitable or religious organisations in real-time via the platform interface.

[00133] The system 10 of the present invention is adapted to receive donations via distinct channels – Mobile App, POS Payment Device and Web E-Donation Platform. The platform makes the process of charitable giving a passive component of their lifestyle by providing them the opportunity to make small donations without adjusting their spending habits or behaviour. In one embodiment, the system 10 is adapted to provide functionality such as rounding up to the nearest dollar on payments at point-of-sale and donating the difference between the rounded and original amount to the nominated charitable or religious organisations or appeal / campaign.

[00134] Overall the system 10 of the present invention is adapted to encourage ongoing, sustainable change on domestic, regional and global levels. The system 10 greatly improves the visibility of charitable or religious organisations and their accessibility to funding as an on-demand service that integrates seamlessly with the user's lifestyle.

[00135] The system 10 of an embodiment of the present invention is adapted to support almost all types of charitable or religious causes. Charitable or religious causes refer to the principles a charity or religion stands for. This specifies the aims and objectives charitable or religious organisations want to achieve and the cause they support. Users will be able to align with charitable or religious organisations which support the same causes of importance to them. In one embodiment, the system 10 is adapted to convert the nature of the donation for one charitable or religious cause to another charitable or religious cause through the peer-to-peer transaction.

[00136] In one embodiment, the system 10 supports custom push notification messages that are sent to donors based on the Charity or Religious organisations they have marked a favourite, donated to, or causes they have indicated support for.

[00137] In another embodiment, the system 10 is adapted to provide automatic Settlement Functionality that will settle the aggregated donation amounts based on defined time-periods to charitable or religious organisations based on donations from all donors who donated to that specific charitable or religious organisations or appeal/campaign.

[00138] In one embodiment, the system 10 supports all major payment processes, including bank transfer, payment by credit card, payment by debit card, payment from bank accounts, Apple Pay, Google Pay and digital wallet transactions for accepting donations. In another embodiment, the system 10 is adapted to collect donations of other assets, such as non-fungible tokens, cryptocurrency, microtransactions of other applications, or other in-app assets. The system 10 maintains one or more pools of electronic assets or payments for peer-to-peer transactions to reduce immediate person transaction costs.

[00139] The system 10 of the present invention is adapted to provide a secured payment process. All card numbers are encrypted on a disk with high grade encryption, such as AES-256 and then securely transmitted to the Payment Processing Bank 20, where the Bank 20 processes the payment and provides a unique token for the specific card or payment method. Once the unique token for the card or payment method has been received, the encrypted card data is deleted, and the unique token is stored in the database in the donor's record. No card number data is ever stored in the database. Supported infrastructure for storing and transmitting unique tokens runs within separate hosting infrastructure, and doesn't share any credentials with gateway primary services. In one embodiment, the transaction is recorded on a non-repudiated distributed ledger in a blockchain structure.

[00140] The system 10 of the present invention is adapted to make sure that incentives are generous and easy to claim, equally available across charitable or religious causes and simple to understand. As such, people from all walks of life are encouraged to give to a targeted range of charitable or religious causes based on their donation behaviour.

[00141] The system 10 will be rewarding donors with free offers from Corporate Organisations (Corporate Partners) based on certain donation milestones being achieved by each donor. The awards can be selected from the pool of electronic assets such as offers, discounts, or vouchers that are donated by Corporate Partners. In another embodiment, the user may purchase the award with a discounted price and the income will, in turn, become another donation.

[00142] One application implemented in the system 10 of an embodiment of the present invention is integrated with Social Media platforms for easy sharing of donation events on the news feeds of users and charitable or religious organisations on social media platforms such as Facebook, Instagram, Twitter, and others.

[00143] The system 10 of the present invention may incorporate a highly secured gateway to user's financial accounts to fetch transactions daily from the user's banking and credit accounts. The end-customer shares Credentials with the gateway via a secure TLS channel. The gateway encrypts the Credentials with a public key, using RSA and AES 256 bit, and then sends this to the Credential Storage. Credential Storage encrypts the credentials once more and creates a unique, one-time Token which is sent to the gateway. Then finally the gateway starts the fetching of data from the user's linked financial institution.

[00144] In another embodiment, the system 10 of the present invention system will be integrated with Machine Learning Algorithms for determining User's Financial Donation Capacity. It will analyse the daily transactions of user's linked financial accounts and through the use of machine learning will determine the user's income levels and their expenditure to autonomously and predictively suggest donation amounts most suited to their financial capacity. The purpose of this machine learning integration is to increase the overall amount of donations raised for charitable or religious organisations that most suit a user's aligned causes.

[00145] The application implemented in the system 10 of the present invention is adapted to convert everyday banking transactions into donations by rounding up the

purchase amount of each transaction to the nearest whole currency unit when they link it to their financial accounts. These small donations are then aggregated and donated to the charitable or religious organisations (nominated organisation using our application) of their choice. Donors can set a daily limit for how much they want to round up and create as many roundup accounts as they have financial accounts. They simply set it and forget it. Roundups occur automatically with every transaction. This helps eliminate donor fatigue for both the donor and charitable or religious organisations.

[00146] The system 10 is described as an innovative platform that allows end-users to make automated transactions to partnered charitable or religious organisations of their choosing via a seamless user interface accessible on a user's smartphone. The system 10 incentivises donations by offering rewards, offers or vouchers to users and allowing for partnered corporate organisations to share content with users to increase engagement. The system 10 of an embodiment of the present invention is adapted to provide a platform that embraces a mobile-first approach whereby it provides an engaging digital marketplace between donors and charitable or religious organisations.

[00147] Preferably, the system 10 will improve the end-to-end user experience of making charitable or religious donations through a personalised mobile experience. The intended outcome of this is better engagement between charitable or religious organisations and their donors, resulting in more donations being received to further support charitable or religious organisations in their endeavours. The system 10 of an embodiment will achieve this by listing only validated charitable or religious organisations, automating reporting, integrating with social media, providing tax-deductible receipts for micro-donations and facilitating mobile giving, which will all improve the user experience for the donor.

[00148] The system 10 of the present invention provides a platform for Donors to give with ease and provide them with incentives for donating to charitable or religious organisations of their choosing. The system 10 is also adapted to provide real-time integration with charitable or religious organisations information technology systems.

[00149] The system of claim 10 is able to clearly understand the twelve (12) charitable purposes set out in the Charities Act 2013 ((Cth) (section 12(1)) Australia). These are the purposes of:

- a. advancing health, education, religion, culture or social or public welfare
- b. promoting or protecting human rights, and
- c. other purposes beneficial to the public.

[00150] The system 10 will ensure good governance by being transparent about the amount of donations received and disclose the allocation of funds to build public trust.

[00151] The system 10 will enable ranking algorithms to tailor the content of the application, for example, charitable or religious organisations and appeals / campaigns. The application will be showing various categories, such as last visited, last donated, favourite charitable or religious organisations, featured charities, among others. This will increase the user's involvement in the application and determining the allocation of their donations.

[00152] The system 10 may also include the following feature: News Feed - this will show information from the charitable or religious organisations the user is following and donating to, providing insight into the usage of their donated funds and other updates. In one embodiment, the system 10 will recognise and build on traditional forms of giving to perpetuate a culture of giving that leverages the strengths of the local context.

[00153] The system 10 of an embodiment of the present invention is adapted to enable charitable or religious organisations to collect the fund for instant relief in any emergency or immediate situation such as natural calamities. The system 10 may also be configured to allow users to link their financial accounts to round up their daily transactions to the nearest dollar increment to be donated to charitable or religious organisations facilitating the donation of effectively digital loose change.

[00154] In another embodiment, the system 10 may enable charitable or religious organisations to push notifications to the mobile phones of users who have donated to them in the past or actively following them. This enables the charitable or religious organisations to directly engaging with its donors on a personalised level for specific fundraising appeals.

[00155] In another embodiment of the present invention, the system 10 is described as an innovative payment and software platform whereby cardholders/consumers can donate to a charity of their choice at merchant store locations such as Food and Beverage Outlets, Health Providers and the like, known as the GivePlease In-Store Platform. Cardholders/consumers ('Customers' or 'Donors') can round up their bill at a merchant location (Merchant) to make automated donation payment transactions to partnered charitable or religious organisations via a seamless user interface accessible on a donation device 200 by using a credit or debit card, electronic wallet or mobile device.

[00156] An embodiment of the system 10 allows Merchants to collect payments from their customers for their goods and services (i.e. Restaurant Bill) and provides their customers the ability to round-up their bill to the closest \$1, \$5, or \$10 increment or a custom amount to be donated to any charity organisation registered with the GivePlease In-Store Platform.

[00157] The payment for the merchant's product or services and the charitable donation is collected through a single tap, swipe or chip payment transaction similar to how payments are accepted via credit card or debit card from the donation devices 200 of the present invention. The GivePlease software application resides on the donation device 200 and connects to global banks for facilitating electronic payment transactions and into GivePlease' back-end web portal 14 (hosted within a cloud hosted environment) to communicate all payment and user interaction data, handle the distribution of funds and reporting to merchants and charitable or religious organisations, dispersal of electronic receipts for customers/donors and aggregated data mining for machine learning algorithms to improve donations and donor and charity engagement.

[00158] The GivePlease In-Store Platform is engineered with the donation device 200 of the present invention deployed at Merchant locations whereby it provides an engaged digital marketplace between donors and charities facilitated by merchants to allow donors to donate to charities of their choice in the domination of their choice with the convenience of carrying out the donation in a physical store when they are visiting a merchant location.

[00159] At the end of the payment and donation transaction, the customer/donor receives a printed payment receipt for both the merchant's products or services and the charitable donation to be used for tax deduction purposes. The customer/donor has the ability to receive an SMS receipt with a web link whereby they can view their charitable donation receipt as a secure web page from a mobile web browser that can be printed, saved for later, forwarded onto a recipient email and the ability for the donor to record their specific details such as mobile number, email, tax file number and other details to be sent securely to the charitable or religious organisations. Further to this, a unique QR code is produced and printed on the physical donation receipt whereby donors can scan the QR code to view the electronic donation receipt in the same state as above.

[00160] The system 10 described in Figure 1 of an embodiment of the present invention is adapted to improve the donors' experience of making charitable and religious donations through a donation device 200 when they are paying for a merchant's products or services and are physically shopping or dining at merchant locations. The intended outcome of this platform is providing better access for charitable donations, better engagement between charitable or religious organisations and donors, and increased donations received to further support charitable or religious organisations in their endeavours. The system 10 will achieve this by listing only validated charitable or religious organisations, automating reporting for both merchant (their sales) and the charitable or religious organisations (their donations), integrating with social media, and providing tax-deductible receipts for micro-donations, to improve the overall user experience for the donor.

[00161] In one embodiment, the system 10 is also adapted to facilitate the electronic payment (credit card or debit card such as Visa, Mastercard, American Express, China Union Pay, JCB, etc, or electronic wallets such as AliPay, PayNow, WeChat Pay, Google Pay, Apple Pay or GrabPay) with a donation device 200 using the Payment Application of the present invention and accepts payments from customers on behalf of merchants and any donation amounts from donors on behalf of charitable or religious organisations.

[00162] In one embodiment, the GivePlease back-end server 16 autonomously analyses the payments data and the funds received into the GivePlease Bank account 20; and distributes and settles the merchant's sale funds (less any processing fees) through an automated settlement process to the merchant's nominated bank account based on their payment volumes accepted through the Payment Application on the donation device 200 on a daily basis.

[00163] Furthermore, the GivePlease server 16 autonomously analyses the micro-donation payments data, consumer/donor registration details, the consumer/donor's charity selection data and the donation funds received into the GivePlease Bank account 20; and distributes and settles the aggregated donation funds through a monthly automated settlement process to the charitable or religious organisations's nominated bank account based on the aggregated donation volumes accepted from all merchant locations through the Payment Application on the donation device 200 on a periodically basis (e.g. monthly, quarterly, etc).

[00164] Within the system 10 of an embodiment of the present invention, if a donor enters any specific details regarding themselves such as mobile number, email, name or the like at the time of donation from the donation device 200 or after a donation has taken place through the secure web page accessed from an SMS or QR code receipt, the GivePlease back-end server 16 automatically captures and links this data to the credit card or debit card used for the donation – the donor's payment card. Next time a donor visits either the same or different merchant location with the GivePlease In-Store Platform, the donor does not need to enter their SMS for a receipt. If a donation is processed using the same credit or debit card, the GivePlease back-end server 16 will

automatically send the donor an electronic receipt via their nominated electronic contact details such as their mobile number or email.

[00165] The system 10 of an embodiment of the present invention integrates directly into the charitable or religious organisations's back-office information technology such as their CRM or ERP systems or the web portal 14 in real-time for donation and donor reporting.

[00166] The system 10 of an embodiment is adapted to facilitate data aggregation and through analysis leveraging methods of data mining and machine learning, the system will be able to ascertain and clearly understand the trends of charitable causes as each charitable organisation onboarded onto the GivePlease In-Store Platform will be categorised with their primary charitable cause or purpose including but not limited to advancing health, education, religion, culture, social or public welfare; promoting or protecting human rights, environment, animal welfare, disaster relief, poverty, underprivileged, disability, and other causes beneficial to the public.

[00167] In one embodiment, the system 10 is adapted to ensure good governance by providing transparency with respect to the amount of donations received and disclose the allocation of funds to charity organisations to build public trust.

[00168] The system 10 recognise and build on traditional forms of donating and giving to perpetuate and foster a culture of giving within a social setting such as at a merchant location (i.e. when dining out with friends and family) and leverages the strengths of local context by connecting to local charitable or religious organisations within specific markets.

[00169] In a preferred embodiment, the system 10 is adapted to enable charitable or religious organisations to collect donation funds instantly for specific appeals in any given emergency situation such as natural calamities i.e. earthquake, tsunami, bushfire, etc.

[00170] In one embodiment of the present invention, the system 10 can be achieved utilising payment data security with the following features developed and implemented within the GivePlease software application resides on the donation device 200 and the connectivity to global banks 20 for facilitating and processing payment transactions and into GivePlease' back-end server 16:

- Ultra-Safe Security Processor;
- NFC Contactless Certified;
- Support RSA, AES, 3DES Micro;
- PCI PTS 5.x, SRED; and
- ARM Cortex-A53 is one of the first two microarchitectures implementing the ARMv8-A 64-bit instruction set.

[00171] The system 10 of an embodiment of the present invention is adapted to provide Merchants with an application-based POS payment solution to assist them:

- Reduce infrastructure costs by implementing PCI compliant mobile payment solutions for merchants.
- Improve payment efficiencies
- Reduce transaction costs
- A single platform that operates globally
- Enables International payments
- Reduce administrative work, manual data entries, and time-consuming reconciliations
- Increase customer comfort and ensure the security of customer data

[00172] Referring to Figure 6, this provides a high-level overview of all the components that will be involved in building an embodiment system 10. These components include internal/external APIs and components that the platform will interact with to send/receive data to achieve the requirements mentioned.

[00173] The user web portal 300 and e-donation website 300 will be the public-facing platform where the users would be able to donate to a charitable or religious organisations through a web interface through general donations, donations to causes, appeals or campaigns, adoption of physical items such as artworks or animals, and joining patron programs. The user would be receiving benefits for these donations as per the rules and regulations of charitable or religious organisations once the user registers or signs up on the platform.

[00174] The administration or GivePlease portal 14 will be provided to the Administrator of the charitable or religious organisations to access reports of donations, transactions and handle the data on server 16 using an inbuilt content management system (CMS).

[00175] In one embodiment, GivePlease platform refers to the heart of the complete system 10 which holds various components including serverless API and database and the internal components that interact together to perform different tasks related to the payments, settlement payouts, etc.

[00176] The identification server or services 18, is adapted to provide trusted digital identities for easy and secure access to third-party government and private sector verified data of a donor. Users can log in utilising their digital identity from third-party identification server or services 18 and GivePlease can access authenticated and verified data about a donor.

[00177] Referring to Figure 14, shows the sequence of events that occur in the processing of a donation payment. The Bank 20 component is a major part of the GivePlease system 10 which allows the application to authorise payment for the donations completed by the donor using their debit or card, Apple Pay, Google Pay, AliPay, GrabPay, PayNow or other payment methods. GivePlease is an authorised partner with a bank 20 to accept payments using these methods. GivePlease does not hold any card information of the user but rather a unique token linked to the payment card or

account held specifically by the bank 20. The system 10 only holds the last four digits of the card and their expiry dates.

[00178] In one embodiment, the system 10 is adapted to allow the charitable or religious organisation to handle all the user authentication using the Single Sign-on (SSO) authorisation layer, this allows the application to validate the authenticity of the user and allow them to use the application. GivePlease will integrate with the existing SSO system of the charitable or religious organisation and allow the user to use the user web portal 300. Preferably, the authentication of the charitable or religious organisation is handled by the identification server/service 18 or SSO engine. The SSO capabilities are not universal to all embodiments in system 10.

[00179] Using the SSO Integration, the donor will be able to perform login/signup operations from the user web portal. Figure 10 shows the flow for both User Login and User Signup processes.

[00180] Users having an existing account on the charitable or religious organisation website will be able to login to the user web portal and perform various actions such as viewing donation history, adopted physical items and their patron program tiers. With the SSO login/signup page, users will be allowed to register themselves into the system and be allowed to login into the E-Donation platform of system 10 as well.

[00181] In one embodiment, the charitable or religious organisation provides an Appeal / Campaign API to integrate with the GivePlease system 10 of the present invention. As such, GivePlease system 10 will be communicating with the Appeal / Campaign APIs provided by the charity or religious organisation to pull public access information. GivePlease system 10 is adapted to invoke Appeal / Campaign API for the first time (post-launch) to sync all the appeal / campaign information available in the charity or religious organisation system.

[00182] Furthermore, after every donation transaction, the GivePlease system 10 will sync the transaction data with the charity or religious organisation. GivePlease system 10

may be configured to run background jobs regularly at a predetermined time to sync the information with the charity or religious organisation system. Figure 11 shows the sequence of events that occur in the Appeal / Campaign API with a charity or religious organisation that have created appeals or campaigns but the sequence can also be used by other charity or religious organisation dealing with the adoption of different physical kinds of products, assets, and commodities such as artwork or animals.

[00183] Once the user completes the donation payment process, the GivePlease system 10 will sync the transaction and donor information to charity or religious organisation server directly. This sync will contain the payment information and the donor information collected from the identity server / service 18 or manual enrolment. This API will be exposed to the charity or religious organisation to sync the required information to the charity or religious organisation system and the server 16.

[00184] In case, the charity or religious organisation system is unable to acknowledge the API success, the GivePlease system 10 will retry to sync the transaction and donor information again at a predetermined time. GivePlease system 10 will run a schedule and will try to send transactions on a daily basis as shown in Figure 12.

[00185] The GivePlease system 10 will prepare periodic financial reports for donor and donation information and make them available to charity or religious organisation back-end systems, enterprise resources planning (ERP) or financial system. These reports will be uploaded by GivePlease system 10 to a secure secured transfer file protocol server where the charity or religious organisation's back-end systems, ERP or financial system can upload them into their respective database by accessing them using the secure SFTP Key.

[00186] These reports include donor information such as name, email, mobile number, identity number, address, date of birth collected from different sources (identification server / services 18, manual enrolment, SSO) and donation payment information such as amount, currency code, mode of payment, and all other relevant information.

[00187] An email will be triggered to charity or religious organisation's points of contact notifying the list of all the unsynchronised transactions and donor information with details of the error received from the charity or religious organisation back-end server. This data can be used by the charity or religious organisation's team to resolve the API issue to allow GivePlease system 10 to sync as shown in Figure 13.

[00188] GivePlease platform of the system 10 of one embodiment is adapted to provide encryption and secure communication of sensitive information. The platform ensures data sent between applications, servers, and shared third-party APIs are always encrypted.

[00189] Although the invention has been described with reference to specific examples, it will be appreciated by those skilled in the art that the invention may be embodied in many other forms, in keeping with the broad principles and the spirit of the invention described herein.

[00190] The present invention and the described embodiments specifically include the best method known to the applicant of performing the invention. The present invention and the described preferred embodiments specifically include at least one feature that is industrially applicable.

CLAIMS:

1. A donation system comprising:

one or more donation devices adapted to receive one or more electronic assets or payments from a donor;

a server connects to the one or more donation devices, the server being adapted to:

(a) conduct near real-time transactions or peer-to-peer transactions with the one or more electronic assets or payments;

(b) record transaction data corresponding to the transactions of the one or more electronic assets or payments in a transaction database;

(c) generate a unique identifier associated with the transaction data;

(d) deposit a fund corresponding to the one or more electronic assets or payments into a bank account of a charity or religious organisation;

(e) after the transaction of the one or more electronic assets or payment is completed, receive identification data of the donor from the one or more donation devices,

(f) store the identification data in a user identification database, and

(g) associate the identification data with the transaction data by the unique identifier,

wherein the user identification database is logically and physically segregated from the transaction database, and the identification data is encrypted.

2. The donation system of Claim 1, wherein the donation device comprises a handheld device adapted to execute an application built to communicate with the server.

3. The donation system of Claim 2, wherein the handheld device is a smart device such as a smartphone or a tablet.
4. The donation system of Claim 3, wherein the application is a mobile application built with Native Android (Java), Native iOS (Swift) or Mobile Inoperable Hybrid Technology such as React.Native.
5. The donation system of Claim 1, wherein the donation device is adapted to execute a POS terminal application for donation transactions and communication with the server.
6. The donation system of Claim 5, wherein the application is an Android based POS terminal application built with Native Android (Java) or Embedded Android (Java).
7. The donation system of any one of Claims 1 to 6, wherein the server is adapted to provide a web back-end engine using serverless APIs built in DotNet C# technology.
8. The donation system of any one of Claims 1 to 7, wherein the server is adapted to render, present and connect an administrator web portal interoperable and accessible from an internet web browser.

9. The donation system of Claim 8, wherein the web portal 14 comprises a web user Interface with back-end logical code for allowing a user to control the server and the donation devices.
10. The donation system of Claim 9, wherein the web interface is built with React.JS and serverless web APIs built in DotNet C# technology.
11. The donation system of Claim 10, wherein the web interface is adapted to provide a front-end mobile responsive web interface built in React.JS framework.
12. The donation system of Claim 11, wherein the web application is deployed on another cloud server, such as Amazon Web Services (AWS) EC2 Server Instances.
13. The donation system of any one of Claims 1 to 12, wherein the server is adapted to provide a user web portal having a web interface to allow a donor to access an electronic receipt.
14. The donation system of Claim 13, wherein the user web portal is adapted to send the electronic receipt to the user through a short message service or an electronic mail.
15. The donation system of any one of Claims 1 to 14, the server is adapted to communicate with administrator web portals or user web portals through a secure socket layer protocol.

16. The donation system of any one of Claims 1 to 15, wherein the donation device is adapted to scan the biometric information from the user or the donor for identification.

17. The donation system of any one of Claims 1 to 16, wherein the donation device is adapted to connect to an identification server or identification service to provide the identification data to the server.

18. The donation system of any one of Claims 1 to 17, wherein the server is adapted to provide one or more secured channels to communicate with the donation device, , identification server or service, and financial institutions.

19. The donation system of Claim 18, wherein one of the secured channels is an encrypted channel using one or more encryption keys stored in secured storage of the server.

20. The donation system of Claim 19, wherein the encryption keys comprises an algorithm using 256 bits RSA cryptography.

21. The donation system of Claim 1, wherein the transaction database and the user database, each is a relational database storage.

22. The donation system of Claim 21, wherein the relational database is implemented as a cloud service,

23. The donation system of Claim 21, wherein the relational database comprises AWS Aurora MYSQL databases deployed on encrypted RDS servers with 2 bifurcated RDS database instances for secure de-identified data storage methods.

24. The donation system of any one of Claims 1 to 23, wherein the donation device and the server comprise an ultra-safe security processor and comprise a device kiosk mode whereby an application operate at any given time and wherein the donation device is remotely commanded by the server and configured to prevent any user to enter the device settings or operate other third-party applications on the donation device.

25. The donation system of Claim 24, wherein the ultra-safe security processor in the donation device and the server is adapted to enforce the use of encrypted certificates for secure system boots and device identification and wherein the donation device and server are adapted to exchange and access data using an API gateway authorisation with JWT tokenisation.

26. The donation system of Claim 24 or Claim 25, wherein the ultra-safe security processor includes random number generators and all the hardware blocks needed to generate keys not available or accessible to the user software.

27. The donation system of any one of Claims 1 to 26, wherein the donation device and the service are adapted to support software level and hardware level encryption, such as RSA, AES, 3DES Micro, etc.

28. The donation system of any one of Claims 1 to 27, wherein the donation device comprises a processor.

29. The donation system of Claim 28, wherein the processor is a 64bits advanced RISC microprocessor such as ARM Cortex-A53.

30. The donation system of any one of Claims 1 to 29, wherein the donation device comprises a Near Field Communication (NFC) module to provide contactless communication with other NFC devices for electronic payment.

31. The donation system of any one of Claims 1 to 30, wherein the donation device comprises a high-speed interface to receive one or more removable storage media or flash memory such as an SD card.

32. The donation system of any one of Claims 1 to 30, wherein the device is adapted to provide a pin transaction security module that is capable of carrying out secure reading and exchange of data.

33. The donation system of Claim 32, wherein the exchange is adapted to comply with Payment Card Industry (PCI) PTS 5.x, SRED guidelines.

34. The donation system of any one of Claims 1 to 33, wherein the donation device comprises one or more modems for communicating the data to a server.

35. The donation system of Claim 34, wherein one of the modems is a WIFI modem for communicate with a local network.

36. The donation system of Claim 34, wherein one of the modems is a cellular network modem in which the donation device is adapted to communicate with the server of the system via cellular networks.

37. The donation system of any one of Claims 1 to 36, wherein the donation device 100, 200 comprises a touch screen.

38. The donation system of any one of Claims 1 to 37, wherein the donation device comprises a keypad.