

Technical Disclosure Commons

Defensive Publications Series

February 03, 2016

PROVIDING FUND UPDATES TO A STORED VALUE CARD

Aneto Okonkwo

Erwin Aitenbichler

Iyad Assad

Follow this and additional works at: http://www.tdcommons.org/dpubs_series

Recommended Citation

Okonkwo, Aneto; Aitenbichler, Erwin; and Assad, Iyad, "PROVIDING FUND UPDATES TO A STORED VALUE CARD",
Technical Disclosure Commons, (February 03, 2016)
http://www.tdcommons.org/dpubs_series/141



This work is licensed under a [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/).

This Article is brought to you for free and open access by Technical Disclosure Commons. It has been accepted for inclusion in Defensive Publications Series by an authorized administrator of Technical Disclosure Commons.

PROVIDING FUND UPDATES TO A STORED VALUE CARD

BACKGROUND

Stored value payment cards can be used to conduct transactions with a point of sale (“POS”) terminal of a merchant. The stored value card may be a device, such as a magnetic stripe card, a chip card, or other credit card style payment instrument, with the capability of communicating with a POS reader via contacting or contactless communication. The stored value card may store data associated with an amount of funds available for a transaction and allow the user to conduct transactions with a merchant. When the user taps or swipes the stored value card with a POS terminal, the stored value card communicates payment information to the POS terminal.

In conventional systems, when a user chooses to add funds to the stored value card, the user must present the card to a teller, a cashier, a kiosk, or other person or system to have the funds added to the stored value card. In an example, the user may present cash or other payment to the teller, and the teller may provide an input to a computing device to communicate the new fund update to the stored value card. In another example, the user presents the stored value card to a kiosk or other computing system and provides cash or other payment to the kiosk. The kiosk then communicates the new fund update to the stored value card. For example, the user inserts the stored value card into the kiosk, or the kiosk communicates wirelessly to the stored value card.

In the examples, the computing system used to add the funds must be managed or otherwise associated with the payment processing system. The user must seek out a location to add the funds, such as a banking institution associated with the payment processing system, a kiosk associated with the payment processing system, a storefront of the payment processing system, or other similar location.

Conventional systems do not allow a user to input supplemental funds online or to update remotely the stored value card.

OVERVIEW

A payment processing system can provide offline fund updates to a stored value card. Funds associated with a stored value account are maintained on the stored value card. The stored value card may be used to conduct transactions with a merchant using the funds maintained on the stored value card.

The payment processing system receives funds to supplement a stored value account of a user. After receiving the funds from a user, the payment processing system identifies a set of merchants with which the user is likely to interact. The payment processing system transmits a fund update to the merchants to add the supplemental funds to the stored value card. When the user employs the stored value card at a point of sale terminal associated with one of the identified merchants, the fund update is transmitted to the stored value card. The balance maintained by the stored value card processor is updated accordingly.

DETAILED DESCRIPTION

A stored value card may be a physical payment card that stores a balance of funds available for transactions with merchants. The stored value card employs a processor embedded in the card to store the account funds and to communicate with merchants. The stored value card is associated with a stored value account of a user. The stored value account is associated with a payment processing system. The payment processing system may be a credit card issuer, a banking institution, a merchant system, or any suitable entity.

The processor of the stored value card may communicate with the payment processing system to receive configuration data, fund updates, or other suitable information associated with the stored value account maintained by the payment processing system. The communication may be via any suitable communication technology. For example, the payment processing system may communicate with the stored value card via near field communication (“NFC”) when the stored value card is within communication range of a terminal of the payment processing system, such as while at a location of the payment processing system. In another example, the user may

insert the stored value card into a kiosk of the payment processing system to facilitate a communication to the stored value card from the payment processing system.

The payment processing system receives a request from the user to make an initial deposit of funds onto the stored value card. For example, the user may transfer funds from a bank account or credit card account to the payment processing system for deposit on to the stored value card. In another example, the user deposits cash with the payment processing system to be deposited onto the stored value card. The funds are stored on the processor of the stored value card. For example, the payment processing system transmits instructions to the processor on the stored value card. The instructions provide the funds to the stored value card for conducting transactions.

After funds are stored on the stored value card, the user may present the stored value card at a merchant POS terminal to purchase products and services. When presented, the stored value card transmits to the POS terminal the payment account number and other required data to conduct a transaction. When the POS terminal transmits to the stored value card the amount of the transaction, the stored value card debits the funds on the stored value card in the specified amount. For example, if the stored value card indicated a stored value account balance of \$100 and the transaction was for \$20, then the stored value card will subsequently indicate a balance of \$80.

The user may desire to provide additional funds to the stored value card balance. For example, if the balance on the stored value card is nearing zero, or if the user simply desires to increase the funds on the stored value card, the user may deposit funds in a stored value account on the payment processing system that is associated with the stored value card. The user may deposit the funds in any suitable manner, such as via an online transaction on a website of the payment processing system. However, as the stored value card may not be in communication with the payment processing system, the payment processing system requires a capability to provide the update of funds to the stored value card.

The payment processing system identifies merchants having POS terminals that the user is likely to visit. For example, the payment processing system accesses a list of

the last ten merchant systems at which the user conducted a transaction with the stored value card. The merchants may be identified by data from the transactions submitted at the time of the transaction or at a later time. Individual POS terminals at the merchants may be further identified. In another example, the ten most common merchants at which the user conducts transactions using the stored value card are identified. In another example, a greater or smaller number of merchants are identified, such as five or fifty. Any other suitable manner of identifying the merchants may be employed.

The payment processing system provides the fund update to the identified merchants. For example, the payment processing system transmits a communication to the merchants specifying that the user has contributed a particular amount of funds to the stored value account associated with the stored value card. The communication may further specify the new balance amount. The communication provides the stored value card identifier and any other suitable data. The merchants provide the data to the POS terminals associated with each respective merchant, if needed. The merchant may confirm to the payment processing system that the fund update is received and available for the stored value card.

The payment processing system provides a communication to the user specifying the merchants at which the user can update the stored value card with the fund update. For example, the payment processing system may transmit an email or text message with a list of the merchants to a user computing device associated with the user. In certain examples, the identity of specific POS terminals at the merchants may be provided.

The user travels to a physical merchant location that received the fund update. The physical location may be a retail store, a service center, a kiosk, or any suitable location. The POS terminal at the merchant location may be a POS terminal for purchasing goods or a specialized POS terminal for use in conjunction with stored value cards.

The user swipes or taps the stored value card at the POS terminal. The tap or swipe may be in conjunction with a purchase or may be to receive the fund update. For example, the user may select one or more items for purchase and approach the POS

terminal at the merchant. When prompted for payment, the user may tap or swipe the stored value card to a card reader or other function of the POS terminal. The tap or swipe initiates a communication between the POS terminal and the stored value card. The communication may be a near field communication (“NFC”) or other suitable wireless communication. In an alternate example, the user may swipe a magnetic strip on the stored value card to communicate to a card reader of the POS terminal.

The stored value card provides payment account information to the POS terminal. For example, the stored value card provides an account number and/or other account related data required to conduct a transaction.

Upon receiving the payment account information, the POS terminal accesses the fund update. For example, the POS terminal may store the received fund updates on a memory of the POS terminal and compare the received payment account information to the stored fund updates. In another example, the POS terminal transmits the payment account information to a web server of the merchant, and the web server compares the received payment account information to stored fund updates. The fund updates may be stored in any other suitable location accessible by the POS terminal. After identifying the fund update that is associated with the provided payment account information, the POS terminal associates the fund update with the account of the user.

The POS terminal transmits the fund update to the stored value card. In an example, the POS terminal transmits the fund update via NFC to the stored value card before any current transaction is conducted. That is, if the user is attempting a transaction to purchase a product, the POS terminal transmits the fund update before the transaction is attempted. For example, if the stored value card indicated a stored value account balance of \$100 before approaching the POS terminal and the fund update was for \$20, then the stored value card will subsequently indicate a balance of \$120 before the transaction is conducted.

In another example, the POS terminal transmits the fund update in conjunction with the transaction. In an example, a stored value card indicates a stored value account balance of \$100 before approaching the POS terminal, an item to be purchased costs \$10,

and the fund update is for \$20. When the user taps the stored value card, the POS terminal accesses the card data and the fund update, and initiates the transaction. After the transaction is conducted and the fund update is provided to the stored value card in a manner that is substantially concurrent, the stored value card will subsequently indicate a balance of \$110.

In another example, the user does not need to purchase a product to receive the fund update. For example, the user approaches a POS terminal and taps the stored value card. The POS terminal accesses the fund update and communicates the fund update to the stored value card. A transaction other than the fund update is not required.

By using and relying on the methods and systems described herein, the payment processing system dynamically provides opportunities for a user to update the funds on a stored value card. As such, the systems and methods described herein may be employed to allow the user to update the stored value balance without the need to visit a merchant or other system to deposit funds and receive a stored value card update. For example, a user can provide the funds in an online transfer and receive the update when shopping at a merchant location. The fund updates are more efficient for the user and more cost effective for the payment processing system

Example System Architectures

Figure 1 is a block diagram depicting a system to provide supplemental funds to a stored value card. As depicted in Figure 1, the system includes network computing devices that are configured to communicate with one another via one or more networks or via any suitable communication technology.

Each network includes a wired or wireless telecommunication means by which network devices can exchange data. For example, each network can include a local area network (“LAN”), a wide area network (“WAN”), an intranet, an Internet, a mobile telephone network, storage area network (SAN), personal area network (PAN), a metropolitan area network (MAN), a wireless local area network (WLAN), a virtual private network (VPN), a cellular or other mobile communication network, Bluetooth,

NFC, or any combination thereof or any other appropriate architecture or system that facilitates the communication of signals or data. Throughout this discussion, it should be understood that the terms “data” and “information” are used interchangeably herein to refer to text, images, audio, video, or any other form of information that can exist in a computer-based environment. The communication technology utilized by the devices may be alternative communication technology.

The payment processing system may include a data storage unit accessible by a payment processing system web server. The example data storage unit can include one or more tangible computer-readable storage devices, or the data storage unit may be a separate system, such as, a different physical or virtual machine, or a cloud-based storage service. The payment processing system may employ servers and other systems to manage a stored value card for a user. The payment processing system may provide the stored value cards to the user, update the balance on a stored value card, provide communications to merchant systems and others, receive funds from the user, and perform any other suitable actions associated with managing the stored value card for the user.

The merchant system may utilize a point of sale (“POS”) terminal to conduct transactions with a user. The POS terminal may communicate with user computing devices, payment processing systems, merchant system web servers, stored value cards, and other suitable systems or entities. The POS terminal may communicate with stored value cards via NFC, Bluetooth, Wi-Fi, or any other suitable technology. The POS terminal may utilize a card reader or other device for communicating with or reading the stored value card. In an example, the POS terminal may write data, such as a fund update, to the stored value card.

The merchant system may utilize a web server to store user account information, communicate with the POS terminal and the payment processing system, store fund updates, or perform any other suitable actions.

The stored value card may conform to a typical size and shape of a standard credit card or debit card. The stored value card also may be any other type of stored value card,

such as a fob, keychain, mobile computing device, or any suitable type of device. The stored value card may include an embedded processor that is capable of communicating to a point of sale (“POS”) terminal, a kiosk, or any suitable terminal via near field communication (“NFC”) or any other suitable wireless communication. The stored value card may additionally or alternatively utilize a magnetic strip to communicate to the POS terminal. The processor includes a secure element or other secure memory or hardware or software for securely storing the amount of available funds , the payment account number, the user identification, or any other suitable data.

Figure 2 is a block flow diagram depicting a method to provide supplemental funds to a stored value card.

Figure 3 is a block flow diagram depicting a method for a payment processing system to communicate a fund update to relevant merchants.

Figure 4 is a block flow diagram depicting a method for a user to obtain a fund update at a merchant point of sale

ABSTRACT

A payment processing system provides offline fund updates to a stored value card. The stored value card may be used to conduct transactions with a merchant using funds maintained on the stored value card. The payment processing system receives funds to supplement a stored value card when the stored value card does not have a communication connection with the payment processing system. After receiving the funds, the payment processing system identifies a set of merchants with which a user of the stored value card is likely to interact. The payment processing system transmits the fund update to the merchants. When the user employs the stored value card at a point of sale terminal associated with one of the identified merchants, the fund update is transmitted to the stored value card. The balance on the stored value card is updated accordingly.

1/4

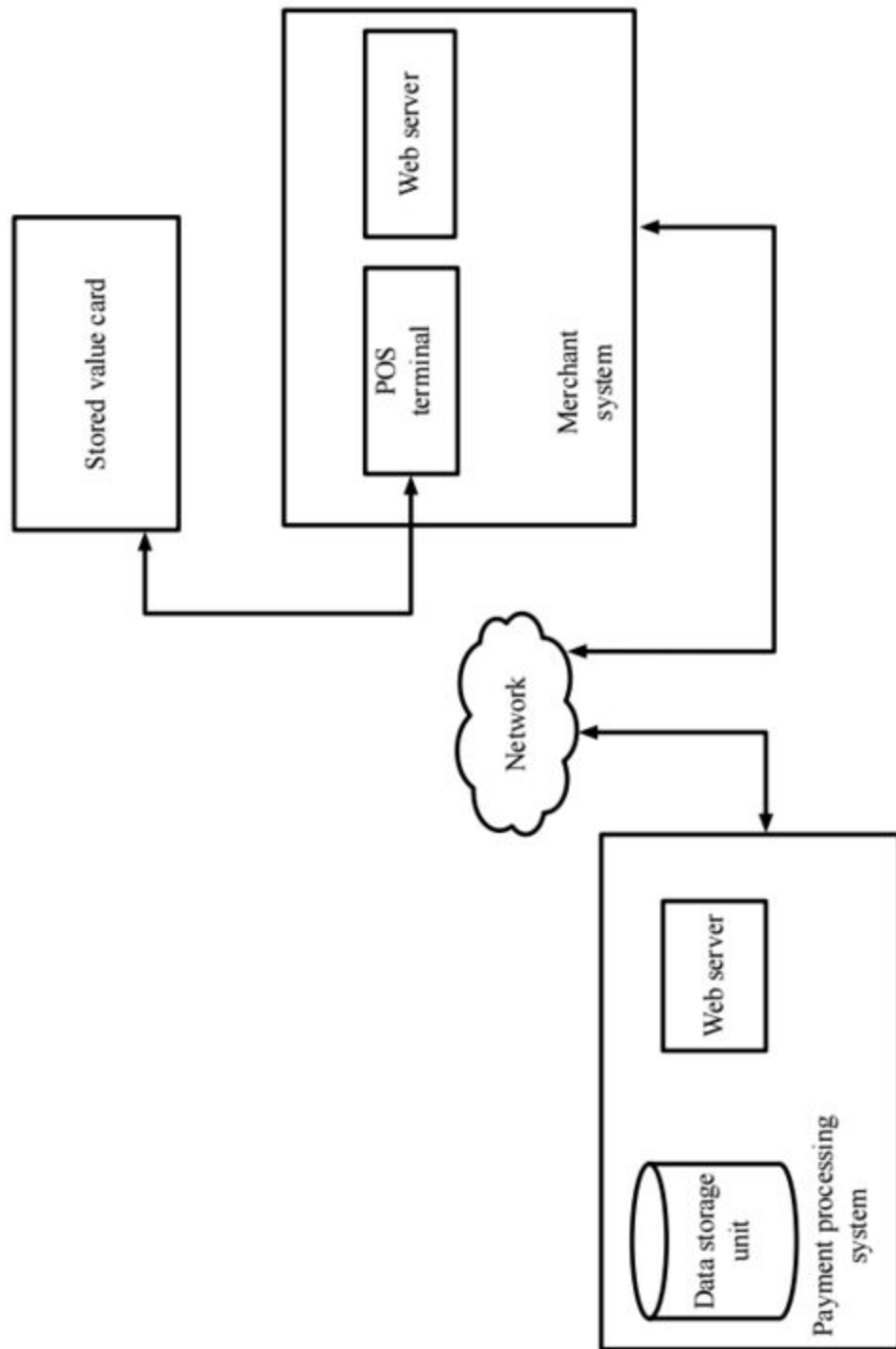


Fig. 1

100

2/4

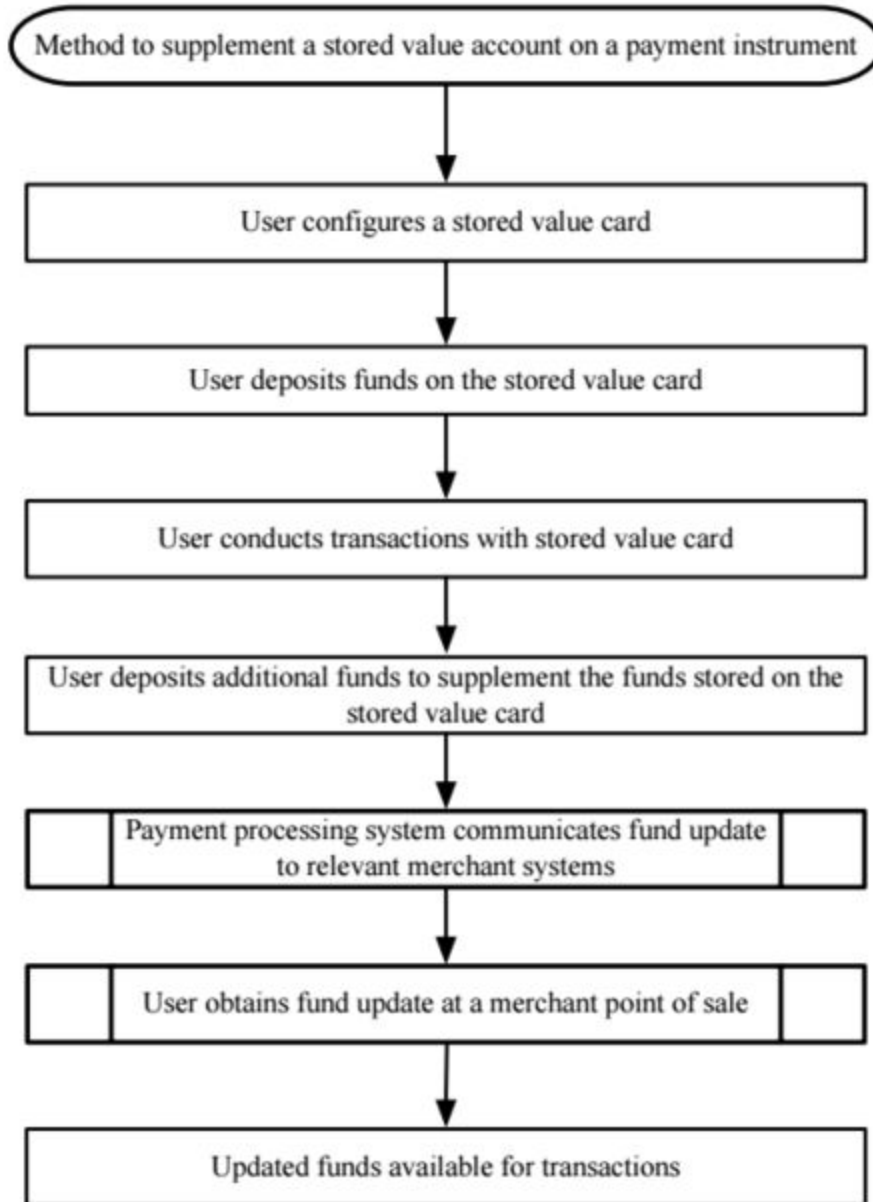


Fig. 2

3/4

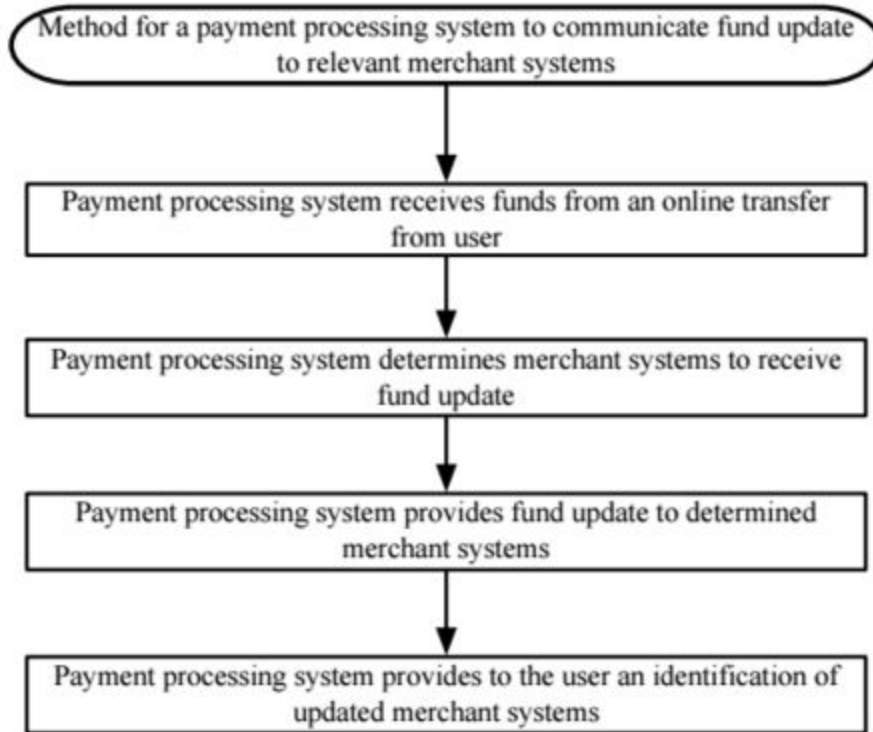


Fig. 3

4/4

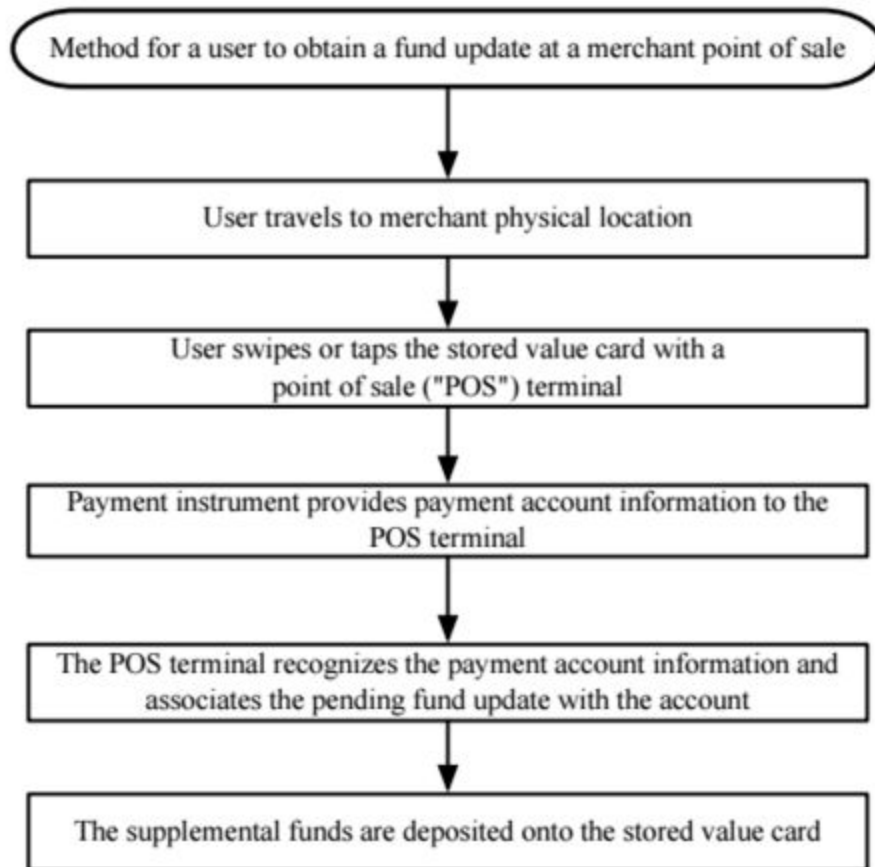


Fig. 4