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MAXING CREDIT CARD BENEFITS USING LOCATION BASED DATA

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ABSTRACT

A consumer establishes a digital wallet account with a payment processing system. The consumer configures settings of a digital wallet application on a consumer device to allow the payment processing system to log the consumer device's location. The consumer, signed in to the digital wallet application on the consumer device, enters a physical location of a merchant, and the payment processing system logs location data of the consumer device. The consumer initiates a transaction at a point of sale device of the merchant. The consumer device forwards transaction data received from the point of sale device to the payment processing system, which determines the applicability of each of the consumer's payment accounts to the transaction based on the location data and transaction data and determines which particular, applicable payment account provides the greatest rewards benefit to the consumer. The digital wallet application suggests the particular payment account to the consumer for use in the transaction with the merchant.

BACKGROUND

In conventional technology, consumers using mobile digital wallet applications may have multiple payment accounts, such as credit cards and bank accounts, stored in a digital wallet account. Consumers manually select a particular payment account for use in a transaction at a merchant point of sale device. Payment accounts may have unique associated rewards program criteria where consumers can earn rewards points or rebates based on qualified purchases. In conventional technology, a consumer purchasing products or services at a merchant location using a digital wallet must decide which particular payment account to use in a transaction based on the consumer's own knowledge of rewards program criteria for each of the consumer's applicable payment accounts and knowledge of how transaction details, such as the merchant type and the nature of the goods and services purchased, are applicable to the rewards program criteria of each payment account.

Current applications for selecting payment accounts for use in digital wallet transaction do not allow for suggesting, by a digital wallet application, a particular payment account to a consumer for use in a transaction that maximizes the consumer's rewards program benefit in the transaction. Additionally, current applications for selecting payment

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accounts for use in digital wallet transactions do not allow for suggesting, by a digital wallet application, a particular payment account that maximizes a consumer's rewards program benefit in a transaction based on merchant information identified from current location data corresponding to a consumer device associated with the consumer.

OVERVIEW

The examples described herein provide computer-implemented techniques to suggest a payment account to a consumer that maximizes or optimizes the consumer's rewards benefits in a digital wallet transaction.

A consumer establishes a digital wallet account with a payment processing system and enters payment account information corresponding to multiple payment accounts of the consumer into the digital wallet account. The consumer downloads a digital wallet application onto a consumer device that communicates with the payment processing system that manages the digital wallet account. The consumer configures the digital wallet application settings to allow the payment processing system to log the location of the consumer device when the consumer is signed in to the digital wallet application.

The consumer signs in to the digital wallet application on the consumer device and enters a physical location of a merchant with the consumer device. The digital wallet application transmits location data of the consumer device to the payment processing system via a network. The consumer initiates a transaction at a point of sale device at the merchant location by selecting an option on the digital wallet application to initiate a transaction and tapping the consumer device to a reader of the point of sale device, thereby establishing a wireless communication channel between the consumer device and the point of sale device. The consumer device receives transaction data from the point of sale device over the wireless communication channel, and the digital wallet application forwards the transaction data to the payment processing system over the network. The payment processing system determines an applicability of each of the payment accounts of the consumer to the transaction and determines which particular payment account provides the greatest rewards benefit to the consumer if used in the transaction. The payment processing system communicates an indication of the particular payment account to the digital wallet application, which suggests the particular payment account to the consumer via the consumer device. The consumer may confirm selection of the particular payment account and confirm the transaction. The

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merchant system, the payment processing system, and/or an issuer system associated with the payment account may then process the transaction using the payment account suggested by the payment processing system and confirmed by the consumer.

EXAMPLE PROCESSES AND ARCHITECTURE

With reference to Figure 1, a system to suggest payment accounts on a digital wallet application for use in a transaction will be described.

A consumer registers for a digital wallet account with a payment processing system. For example, the consumer accesses a website of the payment processing system and selects one or more options on the website to sign up for a digital wallet account with the payment processing system. The consumer may create a consumer name and password to use to access the digital wallet account. The consumer downloads a digital wallet application onto the consumer device. The consumer adds payment account information associated with multiple payment accounts to the digital wallet account using the digital wallet application. The plurality of payment accounts may include credit accounts, debit accounts, bank accounts, merchant store accounts, and/or other appropriate accounts of the consumer. Payment account information may be a payment account number or a payment account identifier and other associated information. The consumer may add the payment information by capturing an image or video of one or more payment cards associated with payment accounts using the consumer device, where the digital wallet application identifies the payment information from the captured image or video. The consumer may also manually enter payment information associated with one or more payment accounts via a user interface of the consumer device. Payment account information may comprise one or more of an account number, an expiration date, a consumer name, and/or other relevant payment information.

The payment processing system determines rewards program criteria for each payment account associated with the consumer. The consumer may manually configure the rewards program criteria for each payment account in account settings of the digital wallet application. For example, the consumer adds payment account information associated with a credit payment account, and configures rewards program criteria of the credit payment account as "2.5% rebate for purchases at hotels, restaurants, airlines, and rental car agencies." To manually configure the rewards program criteria, the consumer may enter text using the

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consumer interface of the consumer device and/or may select one or more objects on the consumer interface of the consumer device, such as slider bars, check boxes, and/or other appropriate consumer interface objects. Instead of, or in addition to, the consumer manually entering the rewards program criteria for a particular payment account, the payment processing system may also communicate with an issuer system associated with the particular payment account to determine rewards program criteria based on a payment account type. The payment processing system transmits a request for rewards program criteria information to a credit card issuer, financial institution, merchant system, or other appropriate issuer system associated with a particular payment account. The payment processing system may transmit a financial account type identifier along with the request for rewards program criteria information. For example, the payment processing system transmits a financial account type identifier to an Issuer System "A" that reads "Issuer System A Gold Level Rewards Program Credit Card," where "Gold Level Rewards Program Credit Card" is the financial account type identifier. In this example, the issuer system receiving the request for rewards program criteria finds rewards program criteria information associated with the financial account type identifier and stored in a storage unit accessible to the issuer system, and communicates that information to the payment processing system.

Rewards program criteria information may be expressed in terms of a combination of conditions and/or benefits. Rewards program criteria may specify a condition comprising a type of merchant that qualifies for particular rewards in a rewards program associated with a financial account. Rewards program criteria may specify a condition comprising a minimum, maximum, or exact amount that needs to be spent in a particular transaction and/or a combination of transactions to qualify for particular rewards in the rewards program. Other conditions may comprise dates, times, days, locations, merchant names/identifiers, and/or other conditions for a transaction and/or plurality of transactions. Rewards program criteria may specify a benefit of receiving rebates, rewards points, gift cards, vouchers, coupons, credits at a merchant store account, discounts, and/or other appropriate benefits. Other appropriate conditions and/or benefits for rewards program criteria may be specified in the rewards program criteria information. For example, rewards program criteria information may comprise "consumer receives 2.5% rebate for purchases at hotels, restaurants, airlines, and rental car agencies," "consumer receives 1 airline mile with Airline X for every predefined amount spent in all purchases," or "consumer receives $20 gift card at Merchant Z

for every $1,000 spent within a three month period in any transaction and/or combination of transactions."

The consumer configures preferences for selection of payment accounts. The consumer may configure the preferences using the digital wallet application via the consumer interface of the consumer device. For example, the consumer may select an option for the payment processing system, when determining which payment account to present to the consumer for use in a transaction, to favor a certain payment account "A" over another payment account "B," where payment accounts A and B offer comparable, similar, and/or equivalent rewards program criteria. The consumer may select an option for the payment processing system to value certain rewards criteria over other rewards criteria. For example, the consumer may indicate that rewards points accounts are more important to the consumer than rebates, or vice versa.

The consumer configures settings in the digital wallet application to allow location-based services when the consumer is signed in to the digital wallet application. For example, the consumer allows the payment processing system to log the location of the consumer device periodically and/or continuously when the consumer is signed in to the digital wallet application. The consumer may revoke permission to log the location of the consumer device at any time by altering the configurations of the digital wallet account via the digital wallet application. The consumer signs in to the digital wallet account via the digital wallet application on the consumer device by selecting the digital wallet application, entering a consumer name and/or password, and/or selecting a consumer interface object to sign in to the digital wallet account. By signing in to the digital wallet application, the consumer may permit the digital wallet application to communicate with and send and/or receive data to/from the payment processing system over a network.

The consumer initiates a digital wallet transaction at a merchant location using the consumer device. For example, the consumer enters a physical merchant location with the consumer device. The consumer may enter the merchant location after, before, or at the same time as the consumer signs in to the digital wallet application. If location-based services are enabled on the consumer device and the consumer is signed in to the digital wallet application, the consumer device logs the consumer device's current location at the merchant location. For example, a GPS module of the consumer device determines the current longitude and latitude of the consumer device location and transmits the location periodically

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to the payment processing system. While at the merchant location, the consumer selects one or more products or services for purchase and approaches a point of sale device for checkout. A merchant point of sale device operator, for example, a store clerk, totals the items at a point of sale device and asks the consumer to select a payment method. The consumer selects the digital wallet account as the form of payment. The consumer selects an option on the digital wallet application to initiate a transaction and taps the consumer device to a near-field communication ("NFC") reader at the point of sale device to establish an NFC communication channel between the consumer device and the point of sale device. In another example, the consumer initiates a Bluetooth communication channel, a Wi-Fi communication channel, or other appropriate wireless communication channel between the consumer device and the point of sale device.

In response to establishing the NFC (or other) communication channel between the consumer device and the point of sale device, the digital wallet application receives transaction data from the point of sale device. The transaction data may comprise a merchant identifier, a description of products and/or services being purchased, a transaction total, or other information related to the transaction. The digital wallet application determines which payment account to suggest to the consumer based on the logged location of the consumer device and/or the transaction data. The digital wallet application may communicate with the payment processing system to identify the merchant based on the current location of the consumer device and/or the merchant identifier. The payment processing system may comprise a directory of merchant names and corresponding location data and/or corresponding merchant identifiers. The payment processing system may identify or derive an address based on the location data and then identify a merchant name in the directory that corresponds to the address. The payment processing system may also identify the merchant name in the directory corresponding to the merchant identifier received in the transaction data from the point of sale device. The payment processing system may also further use context-based information to identify the merchant name. For example, the payment processing system communicates with an internet search system and extracts a past search of a consumer comprising the merchant name. In another example, the consumer selected a loyalty card associated with the merchant on the digital wallet application, and the payment processing system identifies the merchant associated with the selected loyalty card.

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After identifying the merchant name, the payment processing system determines a merchant type based on merchant information. The payment processing system may comprise a directory that lists a merchant type identifier corresponding to each merchant name or merchant identifier. The payment processing system may also receive product specific data or service specific data for products and/or services in the transaction and identify product type identifiers or service type identifiers based on the product specific data. The merchant type identifier may be one of "hotel," "restaurant," "gas station," "airline," "pharmacy," "supermarket," or other appropriate merchant type identifier. A product or service type identifier may be "prescription drug," "food item," "clothing item," "gasoline," "tax preparation," or other appropriate product type identifier or service type identifier.

The payment processing system determines a rewards benefit for each of the payment accounts that the consumer may apply in the transaction. The payment processing system may determine one or more payment accounts associated with the digital wallet account that may be applied in the transaction by determining if the identified merchant type identifier, merchant name, product type identifiers, and/or service type identifiers match any of the stored rewards program criteria. For example, if the rewards program criteria for a particular payment account state "0.5% rebate for purchases at hotels, airlines, and rental car agencies" and the merchant type identifier for the transaction is "hotel," the payment processing system determines that the particular payment account is applicable to the transaction based on matching the merchant type identifier to the rewards program criteria. The payment processing system selects the payment account that the payment processing system calculates as having the most rewards benefit in the transaction. For example, for each payment account applicable to the transaction, the payment processing system calculates a rewards program benefit for using the payment account in the transaction. In calculating the rewards program benefit for each applicable payment account, the payment processing system may determine equivalent monetary values for non-monetary rewards program benefits. For example, the payment processing system determines that 500 rewards points from a certain rewards program account is equal to one dollar. If the payment processing system determines that two or more payment accounts provide equivalent or approximately equivalent rewards program benefits if applied to the transaction, the payment processing system may select a particular one of the two or more payment accounts based on digital wallet account settings configured by the user.

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The payment processing system communicates the selection of the particular payment account providing the greatest, optimized, or preferred rewards benefit to the digital wallet application on the consumer device via the network. The digital wallet application presents the selected payment account to the consumer for selection. The consumer selects the payment account and selects an option to approve the transaction. In another example, digital wallet application does not present an option for the consumer to confirm the payment account but presents only an option to confirm the transaction (which would use the particular payment account selected by the payment processing system). In another example, the digital wallet application automatically applies the payment account to the transaction without consumer input if the consumer configures this option in the digital wallet account settings. In yet another example, the consumer rejects the payment account having the greatest, optimized, or preferred rewards benefit presented by the digital wallet application and/or declines to initiate the transaction. In yet another example, the payment processing system and digital wallet application do not suggest a particular payment account to the consumer. In this example, the consumer manually selects a payment account to apply to the transaction. The consumer may select a merchant type identifier based on the consumer's evaluation of the merchant type, and the digital wallet application suggests one or more payment account options to the consumer that have rewards program criteria applicable to the merchant type selected by the consumer. The consumer then selects a particular payment account to use in the transaction and confirms the transaction.

In response to the consumer approving the transaction by selecting a user interface object on the consumer device, the digital wallet application (or payment processing system) transmits payment account information associated with the payment account selected for use in the transaction to the merchant point of sale device via the wireless communication channel established between the consumer device and the point of sale device, which communicates transaction data to an issuer system associated with the payment account to process a payment.

In another example, the payment processing system processes the transaction. The payment processing system then transmits a confirmation of the processed payment transaction to the point of sale device and/or the consumer device.

By using and relying on the methods and systems described herein, the payment processing system, merchant system, consumer device comprising a digital wallet

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application, and issuer system enable the consumer to initiate a digital wallet transaction using a payment account suggested by the payment processing system that provides the greatest, optimized, or preferred rewards benefit for the transaction. As such, the systems and methods described herein may reduce the inputs required by the consumer via the consumer device.
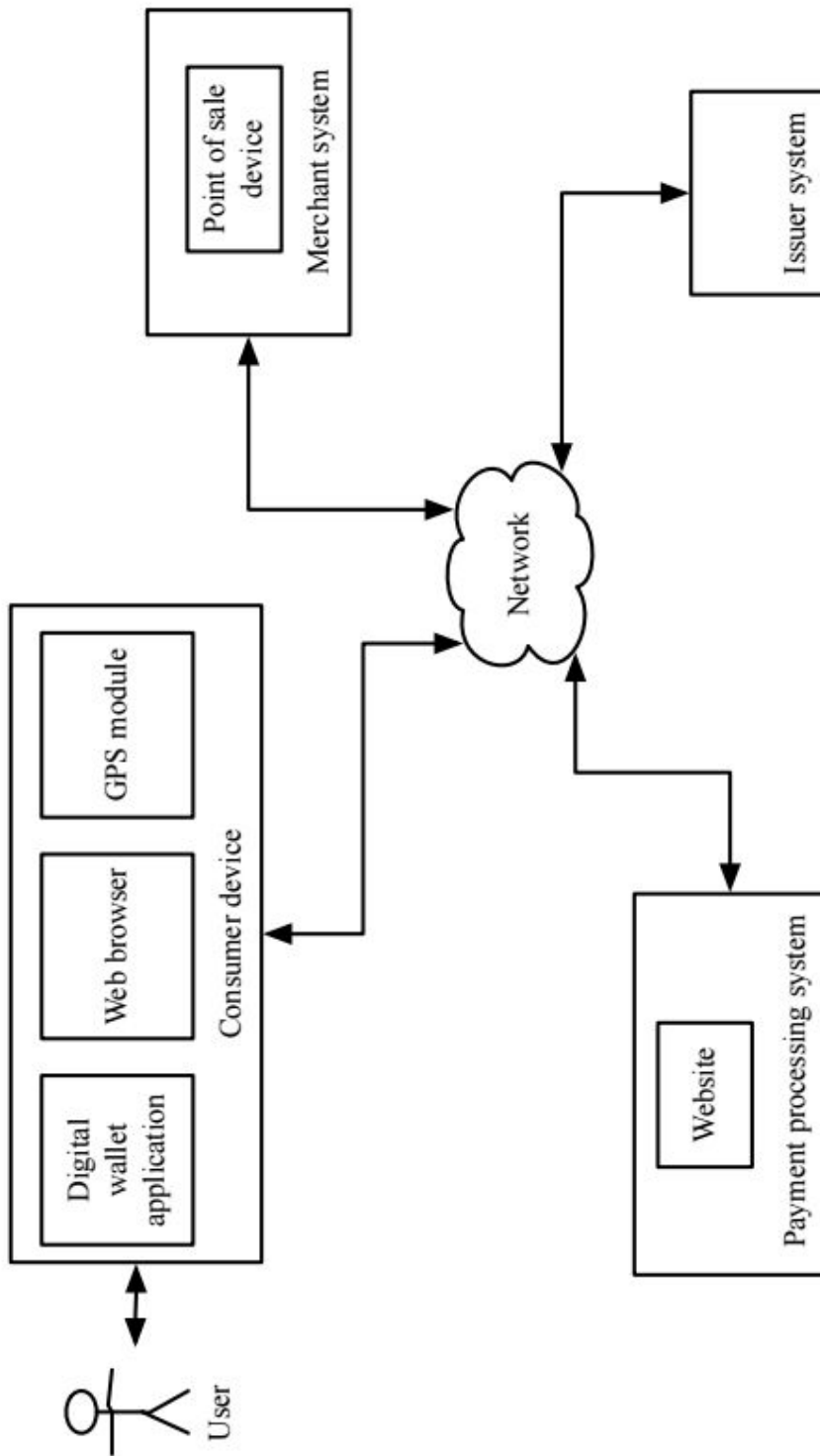
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Figure 1

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