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Method, System, and Computer Program Product for Processing Transactions Using Electronic Wallets

Abstract

A computer-implemented method includes: storing, by a payment application, payment device data including: first and second payment device identifiers and first and second wallet identifiers corresponding to first and second electronic wallets in which first and second payment device credentials of first and second payment devices are respectively stored; initiating a payment transaction with a merchant system; displaying the first and second payment device identifiers; receiving a user input from the user of the user device, the user input comprising a selection of the first payment device identifier; determining that the first electronic wallet includes the first payment device credentials of the first payment device; and facilitating a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATIONS [0001] This application is the United States national phase of International Patent Application No. PCT/US23/28198 filed on July 20,2023, and claims the benefit of U.S. Provisional Application No. 63/390,928, filed on Jul. 20, 2022, the disclosures of which are hereby incorporated by reference in their entireties.

BACKGROUND
1. Technical Field
[0002] This disclosure relates generally to processing transactions and, in non-limiting embodiments or aspects, to methods, systems, and computer program products for processing transactions using electronic wallets.
2. Technical Considerations
[0003] Electronic wallets have become an increasingly popular way for users to initiate electronic payment transactions. For a user to initiate a transaction using their electronic wallet, the merchant must accept that electronic wallet as an acceptable form of payment. However, not all merchants accept electronic wallets or all types of electronic wallets as an acceptable payment method.
SUMMARY
[0004] According to non-limiting embodiments or aspects, provided is a computer-implemented method that includes: storing, by a payment application, payment device data of a plurality of payment devices including a first payment device and a second payment device, the payment device data including: a first payment device identifier of the first payment device and a first wallet identifier corresponding to a first electronic wallet in which first payment device credentials of the first payment device are stored; and a second payment device identifier of the second payment device and a second wallet identifier corresponding to a second electronic wallet in which second payment device credentials of the second payment device are stored; initiating, by the payment application, a payment transaction with a merchant system of a merchant; in response to initiation of the payment transaction, displaying, in the payment application and on a user interface of the user device, the first payment device identifier and the second payment device identifier; receiving, by the payment application, a user input from the user of the user device, the user input including a selection of the first payment device identifier; in response to the user selecting the first payment device identifier, determining, by the payment application based on the first wallet identifier corresponding to the first electronic wallet, that the first electronic wallet includes the first payment device credentials of the first payment device corresponding to the first payment device identifier; and in response to determining the first electronic wallet includes the first payment device credentials, facilitating, by the payment application, a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction, the payment data including at least one of: transaction data from the merchant system associated with the payment transaction, the first payment device credentials from the first electronic wallet, or any

combination thereof.
[0005] In non-limiting embodiments or aspects, facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction may include: retrieving, by the payment application, the transaction data from the merchant system associated with the payment transaction; and transmitting, by the payment application, the transaction data from the merchant system associated with the payment transaction to the first electronic wallet, where the first electronic wallet may initiate authorization of the payment transaction by transmitting a message to an electronic payment network, the message including fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.
[0006] In non-limiting embodiments or aspects, facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction may include: retrieving, by the payment application, the first payment device credentials from the first electronic wallet; and transmitting, by the payment application, the first payment device credentials from the first electronic wallet to the merchant system, where the merchant system may initiate authorization of the payment transaction by transmitting a message to an electronic payment network, the message including fields containing the transaction data from the merchant system associated with the payment transaction and the first payment device credentials from the first electronic wallet.
[0007] In non-limiting embodiments or aspects, the first electronic wallet may not be configured to initiate payment transactions directly with the merchant system.
[0008] In non-limiting embodiments or aspects, the payment device data of the first payment device may include: the first payment device identifier of the first payment device, the first wallet identifier corresponding to the first electronic wallet in which the first payment device credentials of the first payment device are stored, and the second wallet identifier corresponding to the second electronic wallet in which the first payment device credentials of the first payment device are additionally stored, where the selection of the first payment device identifier may further include a selection of the first wallet identifier from selectable options for both the first wallet identifier and the second wallet identifier.
[0009] In non-limiting embodiments or aspects, the displaying the first payment device identifier may further include displaying at least one icon in association with the first payment device identifier, the at least one icon configured to accept at least one offer available if the first payment device identifier is selected for the payment transaction.
[0010] In non-limiting embodiments or aspects, the computer-implemented method may further include: providing, by the payment application to the merchant system and/or to an acquirer or gateway system of the merchant system, a software development kit including a plurality of application programming interfaces (APIs) that are configured to cause the merchant system and/or the acquirer or gateway system to generate at least one API call to at least one of the following: the payment application, the first electronic wallet, the second electronic wallet, an electronic payment network, and/or any combination thereof to process the payment transaction.
[0011] According to non-limiting embodiments or aspects, provided is a system including a payment application including at least one processor programmed or configured to: store payment device data of a plurality of payment devices including a first payment device and a second payment device, the payment device data including: a first payment device identifier of the first payment device and a first wallet identifier corresponding to a first electronic wallet in which first payment device credentials of the first payment device are stored; and a second payment device identifier of the second payment device and a second wallet identifier corresponding to a second electronic wallet in which second payment device credentials of the second payment device are stored; initiate a payment transaction with a merchant system of a merchant; in response to initiation of the payment transaction, display, in the payment application and on a user interface of

the user device, the first payment device identifier and the second payment device identifier; receive a user input from the user of the user device, the user input including a selection of the first payment device identifier; in response to the user selecting the first payment device identifier, determine, based on the first wallet identifier corresponding to the first electronic wallet, that the first electronic wallet includes the first payment device credentials of the first payment device corresponding to the first payment device identifier; and in response to determining the first electronic wallet includes the first payment device credentials, facilitate a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction, the payment data includes at least one of: transaction data from the merchant system associated with the payment transaction, the first payment device credentials from the first electronic wallet, or any combination thereof.

[0012] In non-limiting embodiments or aspects, facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction may include the payment application including at least one processor programmed or configured to: retrieve the transaction data from the merchant system associated with the payment transaction; and transmit the transaction data from the merchant system associated with the payment transaction to the first electronic wallet, where the first electronic wallet may initiate authorization of the payment transaction by transmitting a message to an electronic payment network, the message including fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.

[0013] In non-limiting embodiments or aspects, facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction may include the payment application including at least one processor programmed or configured to: retrieve the first payment device credentials from the first electronic wallet; and transmit the first payment device credentials from the first electronic wallet to the merchant system, where the merchant system may initiate authorization of the payment transaction by transmitting a message to an electronic payment network, the message including fields containing (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.

[0014] In non-limiting embodiments or aspects, the first electronic wallet may not be configured to initiate payment transactions directly with the merchant system.

[0015] In non-limiting embodiments or aspects, the payment device data of the first payment device may include: the first payment device identifier of the first payment device, the first wallet identifier corresponding to the first electronic wallet in which the first payment device credentials of the first payment device are stored, and the second wallet identifier corresponding to the second electronic wallet in which the first payment device credentials of the first payment device are additionally stored, where the selection of the first payment device identifier may further include a selection of the first wallet identifier from selectable options for both the first wallet identifier and the second wallet identifier.

[0016] In non-limiting embodiments or aspects, the displaying the first payment device identifier may further include displaying at least one icon in association with the first payment device identifier, the at least one icon configured to accept at least one offer available if the first payment device identifier is selected for the payment transaction.

[0017] In non-limiting embodiments or aspects, the payment application may include at least one processor programmed or configured to: provide, to the merchant system and/or to an acquirer or gateway system of the merchant system, a software development kit including a plurality of application programming interfaces (APIs) that are configured to cause the merchant system and/or the acquirer or gateway system to generate at least one API call to at least one of the following: the payment application, the first electronic wallet, the second electronic wallet, an electronic payment network, and/or any combination thereof to process the payment transaction.

[0018] According to non-limiting embodiments or aspects, provided is a computer program product including at least one non-transitory computer-readable medium including one or more instructions that, when executed by at least one processor of a payment application, cause the at least one processor to: store payment device data of a plurality of payment devices including a first payment device and a second payment device, the payment device data including: a first payment device identifier of the first payment device and a first wallet identifier corresponding to a first electronic wallet in which first payment device credentials of the first payment device are stored; and a second payment device identifier of the second payment device and a second wallet identifier corresponding to a second electronic wallet in which second payment device credentials of the second payment device are stored; initiate a payment transaction with a merchant system of a merchant; in response to initiation of the payment transaction, display, in the payment application and on a user interface of the user device, the first payment device identifier and the second payment device identifier; receive a user input from the user of the user device, the user input including a selection of the first payment device identifier; in response to the user selecting the first payment device identifier, determine, based on the first wallet identifier corresponding to the first electronic wallet, that the first electronic wallet includes the first payment device credentials of the first payment device corresponding to the first payment device identifier; and in response to determining the first electronic wallet includes the first payment device credentials, facilitate a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction, the payment data including at least one of: transaction data from the merchant system associated with the payment transaction, the first payment device credentials from the first electronic wallet, or any combination thereof.

[0019] In non-limiting embodiments or aspects, facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction may include the one or more instructions causing the at least one processor to: retrieve the transaction data from the merchant system associated with the payment transaction; and transmit the transaction data from the merchant system associated with the payment transaction to the first electronic wallet, where the first electronic wallet may initiate authorization of the payment transaction by transmitting a message to an electronic payment network, the message including fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.

[0020] In non-limiting embodiments or aspects, facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction may include the one or more instructions causing the at least one processor to: retrieve the first payment device credentials from the first electronic wallet; and transmit the first payment device credentials from the first electronic wallet to the merchant system, where the merchant system may initiate authorization of the payment transaction by transmitting a message to an electronic payment network, the message including fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.

[0021] In non-limiting embodiments or aspects, the first electronic wallet may not be configured to initiate payment transactions directly with the merchant system.

[0022] In non-limiting embodiments or aspects, the payment device data of the first payment device may include: the first payment device identifier of the first payment device, the first wallet identifier corresponding to the first electronic wallet in which the first payment device credentials of the first payment device are stored, and the second wallet identifier corresponding to the second electronic wallet in which the first payment device credentials of the first payment device are additionally stored, where the selection of the first payment device identifier may further include a selection of the first wallet identifier from selectable options for both the first wallet identifier and the second wallet identifier.

[0023] In non-limiting embodiments or aspects, displaying the first payment device identifier may further include displaying at least one icon in association with the first payment device identifier, the at least one icon configured to accept at least one offer available if the first payment device identifier is selected for the payment transaction.
[0024] In non-limiting embodiments or aspects, the one or more instructions may cause the at least one processor to: provide, to the merchant system and/or to an acquirer or gateway system of the merchant system, a software development kit including a plurality of application programming interfaces (APIs) that are configured to cause the merchant system and/or the acquirer or gateway system to generate at least one API call to at least one of the following: the payment application, the first electronic wallet, the second electronic wallet, an electronic payment network, and/or any combination thereof to process the payment transaction.
[0025] Other non-limiting embodiments or aspects will be set forth in the following numbered clauses:
[0026] Clause 1: A computer-implemented method, comprising: storing, by a payment application, payment device data of a plurality of payment devices comprising a first payment device and a second payment device, the payment device data comprising: a first payment device identifier of the first payment device and a first wallet identifier corresponding to a first electronic wallet in which first payment device credentials of the first payment device are stored; and a second payment device identifier of the second payment device and a second wallet identifier corresponding to a second electronic wallet in which second payment device credentials of the second payment device are stored; initiating, by the payment application, a payment transaction with a merchant system of a merchant; in response to initiation of the payment transaction, displaying, in the payment application and on a user interface of the user device, the first payment device identifier and the second payment device identifier; receiving, by the payment application, a user input from the user of the user device, the user input comprising a selection of the first payment device identifier; in response to the user selecting the first payment device identifier, determining, by the payment application based on the first wallet identifier corresponding to the first electronic wallet, that the first electronic wallet comprises the first payment device credentials of the first payment device corresponding to the first payment device identifier; and in response to determining the first electronic wallet comprises the first payment device credentials, facilitating, by the payment application, a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction, the payment data comprising at least one of: transaction data from the merchant system associated with the payment transaction, the first payment device credentials from the first electronic wallet, or any combination thereof.
[0027] Clause 2: The computer-implemented method of clause 1, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises: retrieving, by the payment application, the transaction data from the merchant system associated with the payment transaction; and transmitting, by the payment application, the transaction data from the merchant system associated with the payment transaction to the first electronic wallet, wherein the first electronic wallet initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.
[0028] Clause 3: The computer-implemented method of clause 1 or 2, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises: retrieving, by the payment application, the first payment device credentials from the first electronic wallet; and transmitting, by the payment application, the first payment device credentials from the first electronic wallet to the merchant system, wherein the merchant system initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising fields containing

the transaction data from the merchant system associated with the payment transaction and the first payment device credentials from the first electronic wallet.
[0029] Clause 4: The computer-implemented method of any of clauses 1-3, wherein the first electronic wallet is not configured to initiate payment transactions directly with the merchant system.
[0030] Clause 5: The computer-implemented method of any of clauses 1-4, wherein the payment device data of the first payment device comprises: the first payment device identifier of the first payment device, the first wallet identifier corresponding to the first electronic wallet in which the first payment device credentials of the first payment device are stored, and the second wallet identifier corresponding to the second electronic wallet in which the first payment device credentials of the first payment device are additionally stored, wherein the selection of the first payment device identifier further comprises a selection of the first wallet identifier from selectable options for both the first wallet identifier and the second wallet identifier.
[0031] Clause 6: The computer-implemented method of any of clauses 1-5, wherein the displaying the first payment device identifier further comprises displaying at least one icon in association with the first payment device identifier, the at least one icon configured to accept at least one offer available if the first payment device identifier is selected for the payment transaction.
[0032] Clause 7: The computer-implemented method of any of clauses 1-6, further comprising: providing, by the payment application to the merchant system and/or to an acquirer or gateway system of the merchant system, a software development kit comprising a plurality of application programming interfaces (APIs) that are configured to cause the merchant system and/or the acquirer or gateway system to generate at least one API call to at least one of the following: the payment application, the first electronic wallet, the second electronic wallet, an electronic payment network, and/or any combination thereof to process the payment transaction.
[0033] Clause 8: A system comprising a payment application comprising at least one processor programmed or configured to: store payment device data of a plurality of payment devices comprising a first payment device and a second payment device, the payment device data comprising: a first payment device identifier of the first payment device and a first wallet identifier corresponding to a first electronic wallet in which first payment device credentials of the first payment device are stored; and a second payment device identifier of the second payment device and a second wallet identifier corresponding to a second electronic wallet in which second payment device credentials of the second payment device are stored; initiate a payment transaction with a merchant system of a merchant; in response to initiation of the payment transaction, display, in the payment application and on a user interface of the user device, the first payment device identifier and the second payment device identifier; receive a user input from the user of the user device, the user input comprising a selection of the first payment device identifier; in response to the user selecting the first payment device identifier, determine, based on the first wallet identifier corresponding to the first electronic wallet, that the first electronic wallet comprises the first payment device credentials of the first payment device corresponding to the first payment device identifier; and in response to determining the first electronic wallet comprises the first payment device credentials, facilitate a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction, the payment data comprising at least one of: transaction data from the merchant system associated with the payment transaction, the first payment device credentials from the first electronic wallet, or any combination thereof.
[0034] Clause 9: The system of clause 8, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises the payment application comprising at least one processor programmed or configured to: retrieve the transaction data from the merchant system associated with the payment transaction; and transmit the transaction data from the merchant system associated with the payment transaction to the first electronic wallet, wherein the first electronic wallet initiates authorization of the payment

transaction by transmitting a message to an electronic payment network, the message comprising fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.
[0035] Clause 10: The system of clause 8 or 9, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises the payment application comprising at least one processor programmed or configured to: retrieve the first payment device credentials from the first electronic wallet; and transmit the first payment device credentials from the first electronic wallet to the merchant system, wherein the merchant system initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising fields containing (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.
[0036] Clause 11: The system of any of clauses 8-10, wherein the first electronic wallet is not configured to initiate payment transactions directly with the merchant system.
[0037] Clause 12: The system of any of clauses 8-11, wherein the payment device data of the first payment device comprises: the first payment device identifier of the first payment device, the first wallet identifier corresponding to the first electronic wallet in which the first payment device credentials of the first payment device are stored, and the second wallet identifier corresponding to the second electronic wallet in which the first payment device credentials of the first payment device are additionally stored, wherein the selection of the first payment device identifier further comprises a selection of the first wallet identifier from selectable options for both the first wallet identifier and the second wallet identifier.
[0038] Clause 13: The system of any of clauses 8-12, wherein the displaying the first payment device identifier further comprises displaying at least one icon in association with the first payment device identifier, the at least one icon configured to accept at least one offer available if the first payment device identifier is selected for the payment transaction.
[0039] Clause 14: The system of any of clauses 8-13, the payment application comprising at least one processor programmed or configured to: provide, to the merchant system and/or to an acquirer or gateway system of the merchant system, a software development kit comprising a plurality of application programming interfaces (APIs) that are configured to cause the merchant system and/or the acquirer or gateway system to generate at least one API call to at least one of the following: the payment application, the first electronic wallet, the second electronic wallet, an electronic payment network, and/or any combination thereof to process the payment transaction.
[0040] Clause 15: A computer program product comprising at least one non-transitory computer-readable medium including one or more instructions that, when executed by at least one processor of a payment application, cause the at least one processor to: store payment device data of a plurality of payment devices comprising a first payment device and a second payment device, the payment device data comprising: a first payment device identifier of the first payment device and a first wallet identifier corresponding to a first electronic wallet in which first payment device credentials of the first payment device are stored; and a second payment device identifier of the second payment device and a second wallet identifier corresponding to a second electronic wallet in which second payment device credentials of the second payment device are stored; initiate a payment transaction with a merchant system of a merchant; in response to initiation of the payment transaction, display, in the payment application and on a user interface of the user device, the first payment device identifier and the second payment device identifier; receive a user input from the user of the user device, the user input comprising a selection of the first payment device identifier; in response to the user selecting the first payment device identifier, determine, based on the first wallet identifier corresponding to the first electronic wallet, that the first electronic wallet comprises the first payment device credentials of the first payment device corresponding to the first payment device identifier; and in response to determining the first electronic wallet comprises the

first payment device credentials, facilitate a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction, the payment data comprising at least one of: transaction data from the merchant system associated with the payment transaction, the first payment device credentials from the first electronic wallet, or any combination thereof.

[0041] Clause 16: The computer program product of clause 15, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises the one or more instructions causing the at least one processor to: retrieve the transaction data from the merchant system associated with the payment transaction; and transmit the transaction data from the merchant system associated with the payment transaction to the first electronic wallet, wherein the first electronic wallet initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.

[0042] Clause 17: The computer program product of clause 15 or 16, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises the one or more instructions causing the at least one processor to: retrieve the first payment device credentials from the first electronic wallet; and transmit the first payment device credentials from the first electronic wallet to the merchant system, wherein the merchant system initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.

[0043] Clause 18: The computer program product of any of clauses 15-17, wherein the first electronic wallet is not configured to initiate payment transactions directly with the merchant system.

[0044] Clause 19: The computer program product of any of clauses 15-18, wherein the payment device data of the first payment device comprises: the first payment device identifier of the first payment device, the first wallet identifier corresponding to the first electronic wallet in which the first payment device credentials of the first payment device are stored, and the second wallet identifier corresponding to the second electronic wallet in which the first payment device credentials of the first payment device are additionally stored, wherein the selection of the first payment device identifier further comprises a selection of the first wallet identifier from selectable options for both the first wallet identifier and the second wallet identifier.

[0045] Clause 20: The computer program product of any of clauses 15-19, wherein the displaying the first payment device identifier further comprises displaying at least one icon in association with the first payment device identifier, the at least one icon configured to accept at least one offer available if the first payment device identifier is selected for the payment transaction.

[0046] Clause 21: The computer program product of any of clauses 15-20, wherein the one or more instructions cause the at least one processor to: provide, to the merchant system and/or to an acquirer or gateway system of the merchant system, a software development kit comprising a plurality of application programming interfaces (APIs) that are configured to cause the merchant system and/or the acquirer or gateway system to generate at least one API call to at least one of the following: the payment application, the first electronic wallet, the second electronic wallet, an electronic payment network, and/or any combination thereof to process the payment transaction.

[0047] These and other features and characteristics of the present disclosure, as well as the methods of operation and functions of the related elements of structures and the combination of parts and economies of manufacture, will become more apparent upon consideration of the following description and the appended claims with reference to the accompanying drawings, all of which form a part of this specification, wherein like reference numerals designate corresponding parts in

the various figures. It is to be expressly understood, however, that the drawings are for the purpose of illustration and description only and are not intended as a definition of the limits of the invention.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0048] Additional advantages and details are explained in greater detail below with reference to the non-limiting, exemplary embodiments that are illustrated in the accompanying schematic figures, in which:

[0049] FIG. **1** is a schematic diagram of a system for processing transactions using electronic wallets, according to some non-limiting embodiments or aspects;

[0050] FIG. **2** is an enrollment user interface of a user device, according to some non-limiting embodiments or aspects;

[0051] FIG. **3** is a checkout user interface of a user device, according to some non-limiting embodiments or aspects;

[0052] FIG. **4** is a payment selection user interface of a user device, according to some non-limiting embodiments or aspects;

[0053] FIGS. **5**A-**5**C are various user interfaces of a user device, according to some non-limiting embodiments or aspects;

[0054] FIG. **6** is a step diagram of a method for processing transactions using electronic wallets, according to some non-limiting embodiments or aspects; and

[0055] FIG. **7** illustrates example components of a device used in connection with non-limiting embodiments or aspects.

DETAILED DESCRIPTION

[0056] For purposes of the description hereinafter, the terms “end,” “upper,” “lower,” “right,” “left,” “vertical,” “horizontal,” “top,” “bottom,” “lateral,” “longitudinal,” and derivatives thereof shall relate to the embodiments as they are oriented in the drawing figures. However, it is to be understood that the embodiments may assume various alternative variations and step sequences, except where expressly specified to the contrary. It is also to be understood that the specific devices and processes illustrated in the attached drawings, and described in the following specification, are simply exemplary embodiments or aspects of the invention. Hence, specific dimensions and other physical characteristics related to the embodiments or aspects disclosed herein are not to be considered as limiting.

[0057] No aspect, component, element, structure, act, step, function, instruction, and/or the like used herein should be construed as critical or essential unless explicitly described as such. Also, as used herein, the articles “a” and “an” are intended to include one or more items and may be used interchangeably with “one or more” and “at least one.” Furthermore, as used herein, the term “set” is intended to include one or more items (e.g., related items, unrelated items, a combination of related and unrelated items, and/or the like) and may be used interchangeably with “one or more” or “at least one.” Where only one item is intended, the term “one” or similar language is used. Also, as used herein, the terms “has,” “have,” “having,” or the like are intended to be open-ended terms. Further, the phrase “based on” is intended to mean “based at least partially on” unless explicitly stated otherwise. In addition, reference to an action being “based on” a condition may refer to the action being “in response to” the condition. For example, the phrases “based on” and “in response to” may, in some non-limiting embodiments or aspects, refer to a condition for automatically triggering an action (e.g., a specific operation of an electronic device, such as a computing device, a processor, and/or the like).

[0058] As used herein, the term “account identifier” may include one or more primary account

numbers (PAN), tokens, or other identifiers associated with a customer account. For example, account identifiers in Real Time Payment (RTP) transactions may include identifiers for sender accounts (called debtor accounts) and identifiers for receiver accounts (called creditor accounts). Account identifiers may be alphanumeric or any combination of characters and/or symbols. Tokens may be associated with a PAN, debtor account identifier, creditor account identifier, or other original account identifier in one or more data structures (e.g., one or more databases, and/or the like) such that they may be used to conduct a transaction without directly using the original account identifier. In some examples, an original account identifier may be associated with a plurality of tokens for different individuals or purposes.

[0059] As used herein, the term “acquirer institution” may refer to an entity licensed and/or approved by a transaction service provider to originate transactions (e.g., payment transactions) using a payment device associated with the transaction service provider. The transactions the acquirer institution may originate may include payment transactions (e.g., purchases, original credit transactions (OCTs), account funding transactions (AFTs), and/or the like). In some non-limiting embodiments or aspects, an acquirer institution may be a financial institution, such as a bank. As used herein, the term “acquirer system” may refer to one or more computing devices operated by or on behalf of an acquirer institution, such as a server computer executing one or more software applications.

[0060] As used herein, the term “communication” may refer to the reception, receipt, transmission, transfer, provision, and/or the like of data (e.g., information, signals, messages, instructions, commands, and/or the like). For one unit (e.g., a device, a system, a component of a device or system, combinations thereof, and/or the like) to be in communication with another unit means that the one unit is able to directly or indirectly receive information from and/or transmit information to the other unit. This may refer to a direct or indirect connection (e.g., a direct communication connection, an indirect communication connection, and/or the like) that is wired and/or wireless in nature. Additionally, two units may be in communication with each other even though the information transmitted may be modified, processed, relayed, and/or routed between the first and second unit. For example, a first unit may be in communication with a second unit even though the first unit passively receives information and does not actively transmit information to the second unit. As another example, a first unit may be in communication with a second unit if at least one intermediary unit processes information received from the first unit and communicates the processed information to the second unit. In some non-limiting embodiments or aspects, a message may refer to a network packet (e.g., a data packet and/or the like) that includes data. It will be appreciated that numerous other arrangements are possible.

[0061] As used herein, the term “computing device” or “user device” may refer to one or more electronic devices configured to process data. A computing device may, in some examples, include the necessary components to receive, process, and output data, such as a processor, a display, a memory, an input device, a network interface, and/or the like. A computing device may be a mobile device. As an example, a mobile device may include a cellular phone (e.g., a smartphone or standard cellular phone), a portable computer, a wearable device (e.g., watches, glasses, lenses, clothing, and/or the like), a personal digital assistant (PDA), and/or other like devices. A computing device may also be a desktop computer, server computer, or other form of non-mobile computer.

[0062] As used herein, the terms “issuer,” “issuer institution,” “issuer bank,” or “payment device issuer,” may refer to one or more entities that provide accounts to individuals (e.g., users, customers, and/or the like) for conducting payment transactions, such as credit payment transactions and/or debit payment transactions. For example, an issuer institution may provide an account identifier, such as a PAN, to a customer that uniquely identifies one or more accounts associated with that customer. In some non-limiting embodiments, an issuer may be associated with a bank identification number (BIN) that uniquely identifies the issuer institution. As used herein, the term “issuer system” may refer to one or more computer systems operated by or on behalf of an

issuer, such as a server executing one or more software applications. For example, an issuer system may include one or more authorization servers for authorizing a transaction.

[0063] As used herein, the term “merchant” may refer to an individual or entity that provides goods and/or services, or access to goods and/or services, to customers based on a transaction, such as a payment transaction. The term “merchant” or “merchant system” may also refer to one or more computer systems operated by or on behalf of a merchant, such as a server computer executing one or more software applications.

[0064] As used herein, the term “payment device” may refer to an electronic payment device, a portable financial device, a payment card (e.g., a credit or debit card), a gift card, a smartcard, smart media, a payroll card, a healthcare card, a wristband, a machine-readable medium containing account information, a keychain device or fob, a radio frequency identification (RFID) transponder, a retailer discount or loyalty card, and/or the like. The payment device may include a volatile or a non-volatile memory to store information (e.g., an account identifier, a name of the account holder, and/or the like).

[0065] As used herein, the term “payment gateway” may refer to an entity and/or a payment processing system operated by or on behalf of such an entity (e.g., a merchant service provider, a payment service provider, a payment facilitator, a payment facilitator that contracts with an acquirer, a payment aggregator, and/or the like), which provides payment services (e.g., transaction service provider payment services, payment processing services, and/or the like) to one or more merchants. The payment services may be associated with the use of payment devices managed by a transaction service provider. As used herein, the term “payment gateway system” may refer to one or more computer systems, computer devices, servers, groups of servers, and/or the like, operated by or on behalf of a payment gateway.

[0066] As used herein, the term “point-of-sale (POS) device” may refer to one or more devices, which may be used by a merchant to conduct a transaction (e.g., a payment transaction) and/or process a transaction. For example, a POS device may include one or more client devices. Additionally or alternatively, a POS device may include peripheral devices, card readers, scanning devices (e.g., code scanners), Bluetooth® communication receivers, near-field communication (NFC) receivers, RFID receivers, and/or other contactless transceivers or receivers, contact-based receivers, payment terminals, and/or the like.

[0067] As used herein, the term “point-of-sale (POS) system” may refer to one or more client devices and/or peripheral devices used by a merchant to conduct a transaction. For example, a POS system may include one or more POS devices and/or other like devices that may be used to conduct a payment transaction. In some non-limiting embodiments, a POS system (e.g., a merchant POS system) may include one or more server computers programmed or configured to process online payment transactions through webpages, mobile applications, and/or the like.

[0068] The term “processor,” as used herein, may represent any type of processing unit, such as a single processor having one or more cores, one or more cores of one or more processors, multiple processors each having one or more cores, and/or other arrangements and combinations of processing units. Reference to “at least one processor” can refer to a previously-recited processor or a different processor.

[0069] As used herein, the term “server” may refer to or include one or more computing devices that are operated by or facilitate communication and processing for multiple parties in a network environment, such as the Internet, although it will be appreciated that communication may be facilitated over one or more public or private network environments and that various other arrangements are possible. Further, multiple computing devices (e.g., servers, point-of-sale (POS) devices, mobile devices, etc.) directly or indirectly communicating in the network environment may constitute a “system.”

[0070] As used herein, the term “system” may refer to one or more computing devices or combinations of computing devices and/or components of such (e.g., processors, servers, client

devices, software applications, and/or the like). Reference to “a device,” “a server,” “a processor,” and/or the like, as used herein, may refer to a previously-recited device, server, or processor that is recited as performing a previous step or function, a different device, server, or processor, and/or a combination of devices, servers, and/or processors. For example, as used in the specification and the claims, a first device, a first server, or a first processor that is recited as performing a first step or a first function may refer to the same or different device, server, or processor recited as performing a second step or a second function.

[0071] As used herein, the term “transaction service provider” may refer to an entity that receives transaction authorization requests from merchants or other entities and provides guarantees of payment, in some cases through an agreement between the transaction service provider and an issuer institution. For example, a transaction service provider may include a payment network such as Visa® or any other entity that processes transactions. The term “transaction processing system” may refer to one or more computer systems operated by or on behalf of a transaction service provider, such as a transaction processing server executing one or more software applications. A transaction processing server may include one or more processors and, in some non-limiting embodiments or aspects, may be operated by or on behalf of a transaction service provider.

[0072] Non-limiting embodiments or aspects described herein relate to systems, methods, and computer program products for processing transactions using electronic wallets. Non-limiting embodiments or aspects include a payment application that stores payment device data of payment devices having payment device credentials stored in different electronic wallets. In response to a user initiating a payment transaction using the payment application, the payment application may display the payment devices and enables the user to select the payment device with which to process the payment transaction. In some non-limiting embodiments or aspects, the user may further select the electronic wallet with which to proceed if the selected payment device has its payment credentials stored in multiple wallets. Based on these selections, the payment application facilitates the transfer of payment data between the merchant system and the electronic wallet corresponding to the selected payment device. This may include the payment application retrieving payment device credentials from the electronic wallet and providing them to the merchant system to initiate authorization of the transaction. This may include the payment application retrieving transaction data from the merchant system and providing them to the electronic wallet to initiate authorization of the transaction. The arrangement of the payment application between the merchant system and the electronic wallets enables electronic wallets that are not otherwise configured to directly initiate transactions with the merchant system (e.g., because the electronic wallet is not integrated with the merchant system) to be used in the transaction with the payment application operating as the intermediary.

[0073] In some non-limiting embodiments or aspects, the payment transaction may be a cross-border payment transaction initiated outside of the country or region of the user. The electronic wallet may be based in the user's country, while the merchant may be based in a different country or region. In such transactions, the merchant system may be less likely to accept the electronic wallet as a form of payment, such that the payment application may enable the transaction to be processed. However, the payment application may also be used to process non-cross-border transactions.

[0074] Referring to FIG. **1**, a system **100** is shown for processing transactions using electronic wallets. The system **100** may process electronic payment transactions. The system **100** may comprise a merchant system **102** of a merchant engaging in payment transactions, and the merchant system **102** may comprise a software development kit (SDK) **104**. The system **100** may comprise a user device **106** having a payment application **108** comprising an adapter layer **110** and a facilitator **112**. The payment application **108** may be a mobile application, a web-based application, and/or the like. The payment application **108** may be operated by or on behalf of the transaction service provider.

[0075] The system **100** may comprise external (e.g., external to the payment application **108**) transaction systems **114** comprising a first electronic wallet **116** and a second electronic wallet **118**. The user device **106** may also include the first electronic wallet **116** and the second electronic wallet **118** as electronic wallet applications, which applications may be separate from payment application **108**. The user may store payment device credentials of their various payment devices with the first and/or second electronic wallets **116**, **118**. The first and/or second electronic wallets **116**, **118** on the user device **106** may be used to initiate payment transactions directly with merchant systems **102** that accept those electronic wallets as payment methods.
[0076] The system **100** may comprise an electronic payment network **120** for processing electronic payment transactions, including authorizing, clearing, and settling the payment transactions. The electronic payment network **120** may optionally comprise an acquirer and/or gateway system **122** associated with facilitating engagement of the merchant system **102** with transaction processing system **124**. The electronic payment network **120** may comprise the transaction processing system. The electronic payment network **120** may comprise issuer system **126**.
[0077] Referring to FIGS. **1** and **2**, the system may enroll payment devices from a plurality of electronic wallets **116**, **118** on the user device **106** with the payment application **108** also on the user device **106**. The payment application **108** (e.g., via the adapter layer **110**) may communicate with the plurality of electronic wallets **116**, **118** (e.g., and any other external transaction systems **114**) to retrieve the payment devices of the user that have payment credentials stored with the plurality of electronic wallets **116**, **118**, and the payment application **108** may display payment device identifiers **130***a-c* of the retrieved payment devices on a user interface **128** of the user device **106**. The adapter layer **110** may be in communication with the external transaction systems **114** and may be a standard interface through with the external transaction systems **114** connect to the payment application **108**. To enroll a payment device with the payment application **108**, the user may engage the “enroll” selectable option **132***a-c*.
[0078] Payment devices from multiple different electronic wallets (e.g., the first electronic wallet **116** and the second electronic wallet **118**) may be enrolled with the payment application **108**. For example, a first payment device may have its payment device credentials stored in the first electronic wallet **116**, and a second payment device may have its payment device credentials stored in the second electronic wallet **118**.
[0079] In some non-limiting embodiments or aspects, the first and second electronic wallets **116**, **118** may not be configured to initiate payment transactions directly with the merchant system **102** engaging in the payment transaction. By “directly” initiate a payment transaction with the merchant system **102**, it is meant that the merchant system **102** does not accept the electronic wallet as a payment form due to the merchant system **102** and the electronic wallet not being integrated to process payment transactions.
[0080] The payment devices that may be enrolled from different electronic wallets may include payment cards (e.g., credit or debit cards) or may include a user financial account issued to the user by the electronic wallet.
[0081] Enrolling a payment device with the payment application **108** may store certain payment device data of the payment device with the payment application **108**. The payment application may enroll the payment device by storing a payment device identifier of the payment device and a wallet identifier of the electronic wallet in which the payment device credentials of the payment device are stored in association with one another. The wallet identifier may identify the relevant electronic wallet from other electronic wallet products. In embodiments in which the payment device credentials of the payment device are contained in a plurality of wallets, a plurality of wallet identifiers may be stored in association with the payment device identifier. The payment device identifier may enable the user to identify the payment device from other of the user's payment devices enrolled in the payment application **108**, and in some embodiments the payment device identifier may include: a name of the payment device, a nickname of the payment device, a picture

of the front of the payment device, the last 4 digits of the payment device PAN number, and/or the like. The payment device identifier may be different from a PAN or token of the payment device, and, as an example, may not be transaction data required by the payment network **120** to process the payment transaction.

[0082] Enrolling a payment device with the payment application **108** may not include storing payment device credentials of the enrolled payment device with the payment application **108**. Payment device credentials are different from the payment device identifier and include unique account identifiers used to process payment transactions using the payment device. Examples of payment device credentials that may not be stored on the payment application **108** include a PAN, a token, a cvv code, an expiration date, and/or the like.

[0083] Referring to FIGS. **1**, **3**, and **4**, a user may initiate a payment transaction using the payment application **108**. FIG. **3** shows a user interface **128** of the user device **106** displaying a checkout page. The checkout page may display transaction details **134** of the payment transaction. The checkout page may also display a payment selectable option **136** that once engaged by the user initiates the payment transaction with the merchant system **102** using the payment application **108**.

[0084] Referring to FIGS. **1** and **4**, in response to initiation of the payment transaction, the payment application **108** may display the payment device identifiers **130***a-c* of the payment devices enrolled with the payment application **108** on the user interface **128** of the user device **106**. The payment application **108** may further display the wallet identifier **138***a-c* for each of the displayed payment device identifiers **130***a-c*. As shown in FIG. **4**, certain payment device identifiers **130***b-c* may be associated with (e.g., have their payment device credentials stored in) only a single electronic wallet, while payment device identifier **130***a* may be associated with a plurality of electronic wallets.

[0085] The payment application **108** may further display at least one offer icon **140***a-b* in association with the payment device identifiers **130***a-c*, the at least one offer icon **140***a-b* configured to accept at least one offer available if the payment device identifier **130***a-c* associated therewith is selected for the payment transaction. Non-limiting examples of offers associated with the offer icon **140***a-b* include an amount or percentage off the present or a future purchase, reward points, a free product or service, a rebate, a promotional repayment program, or the like. In the non-limiting example of FIG. **4**, the offer icons **140***a-b* are associated with a repayment in installments (**140***a*) and a 5% off the purchase (**140***b*).

[0086] Referring to FIGS. **1** and **4**, the payment application **108** may receive a user input **142** from the user of the user device **106**. The user input **142** may comprise a selection of the payment device to be used in the payment transaction. After providing the user input **142**, the user may select a payment submission selectable option **144** to cause the payment application **108** to proceed with processing the payment transaction.

[0087] In response to the user selecting the payment device identifier, the payment application **108** may determine the electronic wallet that comprises the payment device credentials of the selected payment device. The electronic wallet may be determined based on the wallet identifier associated with the selected payment device. In embodiments in which the selected payment device is associated with a plurality of electronic wallets, further user input may be received by the payment application **108**, which further user input comprises a selection of a single wallet identifier of the plurality of wallet identifiers, to cause the payment transaction to proceed using the selected payment device using the selected electronic wallet.

[0088] Referring to FIG. **1**, in response to determining the electronic wallet that comprises the payment device credentials of the selected payment device, the payment application **108** may facilitate a transfer of payment data between the merchant system **102** and the corresponding electronic wallet. For the description hereinafter, the payment device selected by the user is determined to have its payment credentials stored in the first electronic wallet **116**, such that the payment application **108** may facilitate the transfer of payment data between the merchant system

102 and the first electronic wallet **116**.
[0089] The payment data transferred may be data required to process electronic payment transactions over the electronic payment network **120**, such as data elements specified in ISO 8583. Certain of the payment data may be data collected by the merchant system **102** (and/or the acquirer and/or gateway systems **122** thereof), which may comprise transaction data associated with the payment transaction. Non-limiting examples of transaction data may comprise a merchant, acquirer, or gateway identifier, a transaction time or location, a product or service identifier, a merchant classification code, a transaction amount, and/or the like. Certain of the payment data may be data collected by the first electronic wallet **116**, which may comprise payment device credentials of the selected payment device. Non-limiting examples of the payment device credentials include a PAN, a token, a cvv code, an expiration date, and/or the like.
[0090] In some non-limiting embodiments or aspects, the payment application **108** (e.g., the facilitator **112** thereof) may facilitate the transfer of payment data. The facilitator **112** of the payment application **108** may be in communication with the external transaction systems **114** (external to the payment application **108**). In the non-limiting example of FIG. **1**, the facilitator **112** may be in communication with the first electronic wallet **116** and the second electronic wallet **118**.
[0091] In some non-limiting embodiments or aspects, the facilitator **112** may retrieve the transaction data of the payment transaction from the merchant system **102**. The facilitator **112** may transmit this retrieved transaction data to the first electronic wallet **116**. Upon receiving the transaction data, the first electronic wallet **116** may comprise the data required to initiate authorization of the payment transaction. Therefore, in response to receiving the transaction data from the facilitator **112**, the first electronic wallet **116** may transmit a message to the electronic payment network **120** to initiate authorization of the payment transaction. The message may contain data fields containing the transaction data from the merchant system **102** and the payment device credentials from the first electronic wallet **116**.
[0092] With continued reference to FIG. **1**, the first electronic wallet **116** may transmit the message to the transaction processing system **124** (e.g., corresponding to the selected payment device). The transaction processing system **124** may, in response, transmit an authorization request to the issuer system **126** (e.g., corresponding to the selected payment device) to cause the issuer system **126** to generate an authorization decision. The authorization decision may be to authorize, authorize in part, or decline the payment transaction. The issuer system **126** may return an authorization response to the transaction processing system **124** containing a field comprising the authorization decision. The transaction processing system **124** may communicate the authorization decision to the first electronic wallet **116** and/or the merchant system **102**. The first electronic wallet **116** may transmit the authorization decision to the merchant system **102** via the facilitator **112** of the payment application **108**.
[0093] In some non-limiting embodiments or aspects, the facilitator **112** may retrieve the payment device credentials from the first electronic wallet **116**. The facilitator **112** may transmit these retrieved payment device credentials to the merchant system **102**. Upon receiving the payment device credentials, the merchant system **102** may comprise the data required to initiate authorization of the payment transaction. Therefore, in response to receiving the payment device credentials from the facilitator **112**, the merchant system **102** may transmit a message to the electronic payment network **120** to initiate authorization of the payment transaction. The message may contain data fields containing the transaction data from the merchant system **102** and the payment device credentials from the first electronic wallet **116**.
[0094] With continued reference to FIG. **1**, the merchant system **102** may transmit the message to the transaction processing system **124** (e.g., corresponding to the selected payment device), which may be directly transmitted to the transaction processing system **124** or transmitted to the transaction processing system **124** through the acquirer and/or gateway system **122**. The transaction processing system **124** may, in response, transmit an authorization request to the issuer system **126**

(e.g., corresponding to the selected payment device) to cause the issuer system **126** to generate an authorization decision. The authorization decision may be to authorize, authorize in part, or decline the payment transaction. The issuer system **126** may return an authorization response to the transaction processing system **124** containing a field comprising the authorization decision. The transaction processing system **124** may communicate the authorization decision to the merchant system **102** and/or the first electronic wallet **116**. The merchant system **102** may transmit the authorization decision to the first electronic wallet **116** via the facilitator **112** of the payment application **108**. An authorized transaction may proceed to complete processing of the payment transaction.

[0095] With continued reference to FIG. **1**, in some non-limiting embodiments or aspects, the payment application **108** may provide a software development kit (SDK) **104** to merchant system **102** and/or the acquirer and/or gateway system **122** thereof. The SDK **104** may comprise one or more application programming interfaces (APIs) and/or other mechanisms or protocols for interaction between systems or applications that are configured to cause the merchant system **102** and/or the acquirer and/or gateway system **122** to generate at least one API call to initiate processing of the payment transaction initiated with the payment application **108**. The APIs may be configured to cause the merchant system **102** and/or the acquirer and/or gateway system **122** to generate at least one API call to at least one of the following: the payment application **108**, the first electronic wallet **116**, the second electronic wallet **118**, the electronic payment network **120**, and/or any combination thereof to process the payment transaction. APIs from the SDK **104** may be invoked by the merchant system **102** in response to initiation of a payment transaction by the payment application **108** to enable the merchant system **102** to execute the protocol required to process such payment transactions.

[0096] Referring to FIGS. **5**A-**5**C, various user interfaces **128** of the user device **106** are shown according to some non-limiting embodiments or aspects.

[0097] FIG. **5**A shows the display of a notification **146** regarding a status of the payment transaction. The notification may be displayed on the user interface **128** in the payment application **108** of the user device **106**. The notification **146** may provide the user with a status of the payment transaction, such as it being initiated, delayed, authorized, denied, cleared, settled, completed, disputed, and/or the like. The notification **146** may provide an update about a reward status, such as an amount of reward points earned by a payment transaction, a progress update toward a reward, that a reward has been earned, that a reward has been or may be redeemed, and/or the like.

[0098] FIG. **5**B shows the display of a transaction history **148** on the user interface **128** in the payment application **108** of the user device **106**. The transaction history **148** may show a history of payment transactions initiated by and/or completed by the payment application **108**, including any relevant data, such as merchant information, product information, date/time information, amount information, and/or the like. The transaction history **148** may display data associated with offers earned and/or redeemed.

[0099] FIG. **5**C shows the display of selectable offers **150** on the user interface **128** in the payment application **108** of the user device **106**. The selectable offer **150** may correspond to a discounted product or service that may be purchased and/or redeemed by initiating a transaction using the payment application **108**, such as by the user selecting the selectable offer **150**.

[0100] Referring to FIG. **6**, a method **600** is shown for processing transactions using electronic wallets, according to some non-limiting embodiments or aspects. It will be appreciated that one or more steps of method **600** may be executed automatically and/or in response to a preceding step.

[0101] At a step **602**, the method **600** may comprise storing, by a payment application, payment device data of a plurality of payment devices comprising a first payment device and a second payment device. The payment device data may include a first payment device identifier of the first payment device and a first wallet identifier corresponding to a first electronic wallet in which first payment device credentials of the first payment device are stored; and a second payment device

identifier of the second payment device and a second wallet identifier corresponding to a second electronic wallet in which second payment device credentials of the second payment device are stored.

[0102] At a step **604**, the method **600** may comprise initiating, by the payment application, a payment transaction with a merchant system of a merchant.

[0103] At a step **606**, the method **600** may comprise, in response to initiation of the payment transaction, displaying, in the payment application and on a user interface of the user device, the first payment device identifier and the second payment device identifier.

[0104] At a step **608**, the method **600** may comprise receiving, by the payment application, a user input from the user of the user device, the user input comprising a selection of the first payment device identifier.

[0105] At a step **610**, the method **600** may comprise, in response to the user selecting the first payment device identifier, determining, by the payment application based on the first wallet identifier corresponding to the first electronic wallet, that the first electronic wallet comprises the first payment device credentials of the first payment device corresponding to the first payment device identifier.

[0106] At a step **612**, the method **600** may comprise, in response to determining the first electronic wallet comprises the first payment device credentials, facilitating, by the payment application, a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction, the payment data comprising at least one of: transaction data from the merchant system associated with the payment transaction, the first payment device credentials from the first electronic wallet, or any combination thereof.

[0107] In some non-limiting embodiment or aspects, a computer program product for processing transactions using electronic wallets includes at least one non-transitory computer-readable medium including program instructions that, when executed by at least one processor, cause the at least one processor to execute one of the previously-described methods. The at least one processor may include any of the components shown in FIGS. **1**-**5**C (e.g., merchant system **102**, user device **106**, external transaction systems **114**, first electronic wallet **116**, second electronic wallet **118**, electronic payment network **120**, acquirer and/or gateway system **122**, transaction processing system **124**, and/or issuer system **126**, and/or the like).

[0108] Referring to FIG. **7**, shown is a diagram of example components of a device **700** according to non-limiting embodiments or aspects. Device **700** may correspond to any of merchant system **102**, user device **106**, external transaction systems **114**, first electronic wallet **116**, second electronic wallet **118**, electronic payment network **120**, acquirer and/or gateway system **122**, transaction processing system **124**, and/or issuer system **126** shown in FIGS. **1**-**5**C, as an example. In some non-limiting embodiments or aspects, such systems or devices may include at least one device **700** and/or at least one component of device **700**. The number and arrangement of components shown are provided as an example. In some non-limiting embodiments or aspects, device **700** may include additional components, fewer components, different components, or differently arranged components than those shown in FIG. **7**. Additionally, or alternatively, a set of components (e.g., one or more components) of device **700** may perform one or more functions described as being performed by another set of components of device **700**.

[0109] As shown in FIG. **7**, device **700** may include a bus **702**, a processor **704**, memory **706**, a storage component **708**, an input component **710**, an output component **712**, and a communication interface **714**. Bus **702** may include a component that permits communication among the components of device **700**. In some non-limiting embodiments or aspects, processor **704** may be implemented in hardware, firmware, or a combination of hardware and software. For example, processor **704** may include a processor (e.g., a central processing unit (CPU), a graphics processing unit (GPU), an accelerated processing unit (APU), etc.), a microprocessor, a digital signal processor (DSP), and/or any processing component (e.g., a field-programmable gate array (FPGA),

an application-specific integrated circuit (ASIC), etc.) that can be programmed to perform a function. Memory **706** may include random access memory (RAM), read only memory (ROM), and/or another type of dynamic or static storage device (e.g., flash memory, magnetic memory, optical memory, etc.) that stores information and/or instructions for use by processor **704**.

[0110] With continued reference to FIG. **7**, storage component **708** may store information and/or software related to the operation and use of device **700**. For example, storage component **708** may include a hard disk (e.g., a magnetic disk, an optical disk, a magneto-optic disk, a solid state disk, etc.) and/or another type of computer-readable medium. Input component **710** may include a component that permits device **700** to receive information, such as via user input (e.g., a touch screen display, a keyboard, a keypad, a mouse, a button, a switch, a microphone, etc.). Additionally, or alternatively, input component **710** may include a sensor for sensing information (e.g., a global positioning system (GPS) component, an accelerometer, a gyroscope, an actuator, etc.). Output component **712** may include a component that provides output information from device **700** (e.g., a display, a speaker, one or more light-emitting diodes (LEDs), etc.). Communication interface **714** may include a transceiver-like component (e.g., a transceiver, a separate receiver and transmitter, etc.) that enables device **700** to communicate with other devices, such as via a wired connection, a wireless connection, or a combination of wired and wireless connections. Communication interface **714** may permit device **700** to receive information from another device and/or provide information to another device. For example, communication interface **714** may include an Ethernet interface, an optical interface, a coaxial interface, an infrared interface, a radio frequency (RF) interface, a universal serial bus (USB) interface, a Wi-Fi® interface, a cellular network interface, and/or the like.

[0111] Device **700** may perform one or more processes described herein. Device **700** may perform these processes based on processor **704** executing software instructions stored by a computer-readable medium, such as memory **706** and/or storage component **708**. A computer-readable medium may include any non-transitory memory device. A memory device includes memory space located inside of a single physical storage device or memory space spread across multiple physical storage devices. Software instructions may be read into memory **706** and/or storage component **708** from another computer-readable medium or from another device via communication interface **714**. When executed, software instructions stored in memory **706** and/or storage component **708** may cause processor **704** to perform one or more processes described herein. Additionally, or alternatively, hardwired circuitry may be used in place of or in combination with software instructions to perform one or more processes described herein. Thus, embodiments described herein are not limited to any specific combination of hardware circuitry and software. The term "programmed or configured to," as used herein, may refer to an arrangement of software, device(s), and/or hardware for performing and/or enabling one or more functions (e.g., actions, processes, steps of a process, and/or the like). For example, "a processor programmed or configured to" may refer to a processor that executes software instructions (e.g., program code) that cause the processor to perform one or more functions.

[0112] Although embodiments have been described in detail for the purpose of illustration, it is to be understood that such detail is solely for that purpose and that the disclosure is not limited to the disclosed embodiments or aspects, but, on the contrary, is intended to cover modifications and equivalent arrangements that are within the spirit and scope of the appended claims. For example, it is to be understood that the present disclosure contemplates that, to the extent possible, one or more features of any embodiment or aspect can be combined with one or more features of any other embodiment or aspect. In fact, any of these features can be combined in ways not specifically recited in the claims and/or disclosed in the specification. Although each dependent claim listed below may directly depend on only one claim, the disclosure of possible implementations includes each dependent claim in combination with every other claim in the claim set.

Claims

1. A computer-implemented method, comprising: storing, by a payment application, payment device data of a plurality of payment devices comprising a first payment device and a second payment device, the payment device data comprising: a first payment device identifier of the first payment device and a first wallet identifier corresponding to a first electronic wallet in which first payment device credentials of the first payment device are stored; and a second payment device identifier of the second payment device and a second wallet identifier corresponding to a second electronic wallet in which second payment device credentials of the second payment device are stored; initiating, by the payment application, a payment transaction with a merchant system of a merchant; in response to initiation of the payment transaction, displaying, in the payment application and on a user interface of the user device, the first payment device identifier and the second payment device identifier; receiving, by the payment application, a user input from the user of the user device, the user input comprising a selection of the first payment device identifier; in response to the user selecting the first payment device identifier, determining, by the payment application based on the first wallet identifier corresponding to the first electronic wallet, that the first electronic wallet comprises the first payment device credentials of the first payment device corresponding to the first payment device identifier; and in response to determining the first electronic wallet comprises the first payment device credentials, facilitating, by the payment application, a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction, the payment data comprising at least one of: transaction data from the merchant system associated with the payment transaction, the first payment device credentials from the first electronic wallet, or any combination thereof.

2. The computer-implemented method of claim 1, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises: retrieving, by the payment application, the transaction data from the merchant system associated with the payment transaction; and transmitting, by the payment application, the transaction data from the merchant system associated with the payment transaction to the first electronic wallet, wherein the first electronic wallet initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.

3. The computer-implemented method of claim 1, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises: retrieving, by the payment application, the first payment device credentials from the first electronic wallet; and transmitting, by the payment application, the first payment device credentials from the first electronic wallet to the merchant system, wherein the merchant system initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising fields containing the transaction data from the merchant system associated with the payment transaction and the first payment device credentials from the first electronic wallet.

4. The computer-implemented method of claim 1, wherein the first electronic wallet is not configured to initiate payment transactions directly with the merchant system.

5. The computer-implemented method of claim 1, wherein the payment device data of the first payment device comprises: the first payment device identifier of the first payment device, the first wallet identifier corresponding to the first electronic wallet in which the first payment device credentials of the first payment device are stored, and the second wallet identifier corresponding to the second electronic wallet in which the first payment device credentials of the first payment device are additionally stored, wherein the selection of the first payment device identifier further

comprises a selection of the first wallet identifier from selectable options for both the first wallet identifier and the second wallet identifier.

6. The computer-implemented method of claim 1, wherein displaying the first payment device identifier further comprises displaying at least one icon in association with the first payment device identifier, the at least one icon configured to accept at least one offer available if the first payment device identifier is selected for the payment transaction.

7. The computer-implemented method of claim 1, further comprising: providing, by the payment application to the merchant system and/or to an acquirer or gateway system of the merchant system, a software development kit comprising a plurality of application programming interfaces (APIs) that are configured to cause the merchant system and/or the acquirer or gateway system to generate at least one API call to at least one of the following: the payment application, the first electronic wallet, the second electronic wallet, an electronic payment network, and/or any combination thereof to process the payment transaction.

8. A system comprising a payment application comprising at least one processor programmed or configured to: store payment device data of a plurality of payment devices comprising a first payment device and a second payment device, the payment device data comprising: a first payment device identifier of the first payment device and a first wallet identifier corresponding to a first electronic wallet in which first payment device credentials of the first payment device are stored; and a second payment device identifier of the second payment device and a second wallet identifier corresponding to a second electronic wallet in which second payment device credentials of the second payment device are stored; initiate a payment transaction with a merchant system of a merchant; in response to initiation of the payment transaction, display, in the payment application and on a user interface of the user device, the first payment device identifier and the second payment device identifier; receive a user input from the user of the user device, the user input comprising a selection of the first payment device identifier; in response to the user selecting the first payment device identifier, determine, based on the first wallet identifier corresponding to the first electronic wallet, that the first electronic wallet comprises the first payment device credentials of the first payment device corresponding to the first payment device identifier; and in response to determining the first electronic wallet comprises the first payment device credentials, facilitate a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction, the payment data comprising at least one of: transaction data from the merchant system associated with the payment transaction, the first payment device credentials from the first electronic wallet, or any combination thereof.

9. The system of claim 8, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises the payment application comprising at least one processor programmed or configured to: retrieve the transaction data from the merchant system associated with the payment transaction; and transmit the transaction data from the merchant system associated with the payment transaction to the first electronic wallet, wherein the first electronic wallet initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.

10. The system of claim 8, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises the payment application comprising at least one processor programmed or configured to: retrieve the first payment device credentials from the first electronic wallet; and transmit the first payment device credentials from the first electronic wallet to the merchant system, wherein the merchant system initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising fields containing (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device

credentials from the first electronic wallet.
11. The system of claim 8, wherein the first electronic wallet is not configured to initiate payment transactions directly with the merchant system.
12. The system of claim 8, wherein the payment device data of the first payment device comprises: the first payment device identifier of the first payment device, the first wallet identifier corresponding to the first electronic wallet in which the first payment device credentials of the first payment device are stored, and the second wallet identifier corresponding to the second electronic wallet in which the first payment device credentials of the first payment device are additionally stored, wherein the selection of the first payment device identifier further comprises a selection of the first wallet identifier from selectable options for both the first wallet identifier and the second wallet identifier.
13. The system of claim 8, wherein displaying the first payment device identifier further comprises displaying at least one icon in association with the first payment device identifier, the at least one icon configured to accept at least one offer available if the first payment device identifier is selected for the payment transaction.
14. The system of claim 8, the payment application comprising at least one processor programmed or configured to: provide, to the merchant system and/or to an acquirer or gateway system of the merchant system, a software development kit comprising a plurality of application programming interfaces (APIs) that are configured to cause the merchant system and/or the acquirer or gateway system to generate at least one API call to at least one of the following: the payment application, the first electronic wallet, the second electronic wallet, an electronic payment network, and/or any combination thereof to process the payment transaction.
15. A computer program product comprising at least one non-transitory computer-readable medium including one or more instructions that, when executed by at least one processor of a payment application, cause the at least one processor to: store payment device data of a plurality of payment devices comprising a first payment device and a second payment device, the payment device data comprising: a first payment device identifier of the first payment device and a first wallet identifier corresponding to a first electronic wallet in which first payment device credentials of the first payment device are stored; and a second payment device identifier of the second payment device and a second wallet identifier corresponding to a second electronic wallet in which second payment device credentials of the second payment device are stored; initiate a payment transaction with a merchant system of a merchant; in response to initiation of the payment transaction, display, in the payment application and on a user interface of the user device, the first payment device identifier and the second payment device identifier; receive a user input from the user of the user device, the user input comprising a selection of the first payment device identifier; in response to the user selecting the first payment device identifier, determine, based on the first wallet identifier corresponding to the first electronic wallet, that the first electronic wallet comprises the first payment device credentials of the first payment device corresponding to the first payment device identifier; and in response to determining the first electronic wallet comprises the first payment device credentials, facilitate a transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction, the payment data comprising at least one of: transaction data from the merchant system associated with the payment transaction, the first payment device credentials from the first electronic wallet, or any combination thereof.
16. The computer program product of claim 15, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises the one or more instructions causing the at least one processor to: retrieve the transaction data from the merchant system associated with the payment transaction; and transmit the transaction data from the merchant system associated with the payment transaction to the first electronic wallet, wherein the first electronic wallet initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising

fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.

17. The computer program product of claim 15, wherein facilitating the transfer of payment data between the merchant system and the first electronic wallet to initiate processing of the payment transaction comprises the one or more instructions causing the at least one processor to: retrieve the first payment device credentials from the first electronic wallet; and transmit the first payment device credentials from the first electronic wallet to the merchant system, wherein the merchant system initiates authorization of the payment transaction by transmitting a message to an electronic payment network, the message comprising fields containing: (i) the transaction data from the merchant system associated with the payment transaction, and (ii) the first payment device credentials from the first electronic wallet.

18. The computer program product of claim 15, wherein the first electronic wallet is not configured to initiate payment transactions directly with the merchant system.

19. The computer program product of claim 15, wherein the payment device data of the first payment device comprises: the first payment device identifier of the first payment device, the first wallet identifier corresponding to the first electronic wallet in which the first payment device credentials of the first payment device are stored, and the second wallet identifier corresponding to the second electronic wallet in which the first payment device credentials of the first payment device are additionally stored, wherein the selection of the first payment device identifier further comprises a selection of the first wallet identifier from selectable options for both the first wallet identifier and the second wallet identifier.

20. The computer program product of claim 15, wherein displaying the first payment device identifier further comprises displaying at least one icon in association with the first payment device identifier, the at least one icon configured to accept at least one offer available if the first payment device identifier is selected for the payment transaction.