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SYSTEM AND METHOD FOR PROVIDING PREFERENCE BASED PAYMENT TRANSACTION BETWEEN BUYER AND SUPPLIER

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**TITLE: "SYSTEM AND METHOD FOR PROVIDING PREFERENCE BASED
PAYMENT TRANSACTION BETWEEN BUYER AND SUPPLIER"**

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TECHNICAL FIELD

The present subject matter is related, in general to coordinating of payment obligations between buyers and suppliers, and more particularly, but not exclusively to system and method for providing preference-based payment transaction between buyer and supplier.

BACKGROUND

Generally, purchasing means selectively buying goods, services, grocery shopping, house hold goods and the like. Consumer or buyer may buy different commodities from one or more suppliers. At the time of purchase, the buyer may conduct payment transactions with one or more suppliers. Buyers in business environment may conduct transactions with many different suppliers in the course of doing business or conducting other purchasing activities. Usually, not all suppliers may accept or prefer the same type of payment or accept a type of payment preferred by the buyer. This non-uniformity in payment may lead to inefficiencies and increased costs to buyers trying to fulfill supplier payments.

SUMMARY

The following presents a simplified summary of the present disclosure in order to provide a basic understanding of some aspects of the disclosure. This summary is not an extensive overview of the disclosure. It is not intended to identify key or critical elements of the disclosure or to delineate the scope of the disclosure. The following summary merely presents some concepts of the disclosure in a simplified form as a prelude to the more detailed description provided below.

In some embodiments, the disclosure describes receiving supplier data for suppliers associated with a buyer and comparing the suppliers with a list of primary merchants that accept a first payment type. Based on the comparison, the method may include determining qualified suppliers that match the primary merchants and determining one or more non-qualifying suppliers that do not match primary merchants. The method may include comparing the one or more non-qualifying suppliers to a list of secondary merchants that accept a second payment type from a Business Payment Service Provider (BPSP) that accepts the first payment type. The method may also include determining a list of BPSP recipients from the list of one or more non-qualifying suppliers that match the secondary merchants.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are incorporated in and constitute a part of this disclosure, illustrate exemplary embodiments and, together with the description, serve to explain the disclosed principles. The numbers are used throughout the figures to reference features and components. Some embodiments of device or system and/or methods in accordance with embodiments of the present subject matter are now described, by way of example only, and with reference to the accompanying figures, in which:

Figure 1 illustrates a data flow diagram of the payment service system in accordance with some embodiments of the present disclosure;

Figure 2 illustrates a flow diagram of a method of using the payment service system in accordance with some embodiments of the present disclosure;

Figure 3 illustrates a block diagram of a supplier matching service of the payment service system in accordance with some embodiments of the present disclosure;

Figure 4 illustrates a block diagram of a BPSP supplier matching service of the payment service system in accordance with some embodiments of the present disclosure;

Figure 5 illustrates a block diagram of a BPSP payment routing system of the payment service system in accordance with some embodiments of the present disclosure; and

Figure 6 illustrates a block diagram of an exemplary computer system for implementing embodiments consistent with the present disclosure.

The figures depict embodiments of the disclosure for purposes of illustration only. One skilled in the art will readily recognize from the following description that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles of the disclosure described herein.

DESCRIPTION OF THE DISCLOSURE

In the present document, the word "exemplary" is used herein to mean "serving as an example, instance, or illustration." Any embodiment or implementation of the present subject matter

described herein as "exemplary" is not necessarily to be construed as preferred or advantageous over other embodiments.

While the disclosure is susceptible to various modifications and alternative forms, specific embodiment thereof has been shown by way of example in the drawings and will be described in detail below. It should be understood, however that it is not intended to limit the disclosure to the particular forms disclosed, but on the contrary, the disclosure is to cover all modifications, equivalents, and alternative falling within the spirit and the scope of the disclosure.

The terms "comprises", "comprising", or any other variations thereof, are intended to cover a non-exclusive inclusion, such that a setup, device or method that comprises a list of components or steps does not include only those components or steps but may include other components or steps not expressly listed or inherent to such setup or device or method. In other words, one or more elements in a device or system or apparatus preceded by "comprises... a" does not, without more constraints, preclude the existence of other elements or additional elements in the device or system or apparatus.

The terms "an embodiment", "embodiment", "embodiments", "the embodiment", "the embodiments", "one or more embodiments", "some embodiments", and "one embodiment" mean "one or more (but not all) embodiments of the invention(s)" unless expressly specified otherwise.

The terms "including", "comprising", "having" and variations thereof mean "including but not limited to", unless expressly specified otherwise.

The present disclosure facilitates one or more BPSP entities to complete payment transaction between buyers and non-qualifying suppliers (also referred to as remaining suppliers). The non-qualifying suppliers or the remaining suppliers are suppliers on the buyer's supplier list who may not accept payment directly from a payment service (e.g., credit card) through which the buyer may be partnered. The one or more BPSP entities may provide lists of merchants or supplier directories, which support new and/or different payment preferences (e.g., cash payment, electronic payment, credit card payment) set by the suppliers. The one or more BPSP entities may accept a certain payment type (e.g., first, or primary payment type) from the buyer

or from the payment service and provide payment to the non-qualifying or remaining suppliers using the supplier's preferred payment type (e.g. second or secondary payment).

In the course of its business, a commercial enterprise may conduct many Business-to-Business (B2B) transactions. These transactions may occur with many different supplier businesses or entities, each of which may have its own preference or requirements for payment types. For example, some suppliers may accept only credit cards, while others may accept only direct wire transfers, while still others may accept only cash payments, etc. Businesses may be forced to dedicate significant resources, personnel, and time to keeping track of these payment preferences and executing the payments based on these preferences. Additionally, each payment cycle for a business may include new or different suppliers that may introduce new payment preferences and considerations for buyers to accommodate. Of course, individual, non-business entities may encounter similar issues in making purchases and may also benefit from the systems and methods described in the disclosure.

In some instances, a buyer may partner with or otherwise enlist a payment service (e.g., credit card company, bank, payment service provider, etc.) to handle payments to the buyer's suppliers. In some embodiments, a list of suppliers may be provided to the payment service, for example, in an Accounts Payable (AP) file. In some cases, most or all of the suppliers may accept payment via the payment service (e.g., credit card) through which the buyer may be partnered. In some instances, however, one or more of the suppliers on the buyer's supplier list may not accept payment directly from the payment service, but only through other forms of payment (e.g., wire transfer, other credit cards, bank deposit, cash, etc.). In such scenarios, the buyer or the payment service may work with a BPS to complete payments to the one or more non-qualifying suppliers. In some embodiments, a BPS may be an entity that may accept a certain payment type (e.g., first or primary payment type) from the buyer or from the payment service, and provide payment to the non-qualifying suppliers using the supplier's preferred payment type (e.g. second or secondary payment).

Figure 1 illustrates a data flow diagram of the payment service system 100 in accordance with some embodiments of the present disclosure. The data flow diagram depicts flow of data between plurality of entities in the payment service system 100. The plurality of entities include, but is not limited to, a payment service server 85, merchant servers 55/70, a buyer

server 80, a BPSP server 90, an issuer server 65, a primary merchant database 82 and a secondary merchant database 84. The payment service server 85 may be configured to communicate with the merchant servers 55/70, the buyer server 80, the BPSP server 90, the issuer server 65, the primary merchant database 82, the secondary merchant database 84 through the digital communication network, the payment network or through other connections known to a person skilled in the art. The disclosure generally describes a payment service system 100 and methods for using such a payment service system 100 that may provide buyers with a more efficient option for managing purchases and other transactions with a variety of suppliers. In some embodiments, the payment service system 100 may allow an entity, such as a payment service, to automatically identify the qualifying suppliers that may accept a first payment type and automatically identify the one or more non-qualifying suppliers that do not accept the first payment type. In some embodiments, the payment service system 100 may automatically match the one or more non-qualifying suppliers with a list of suppliers that may accept an alternative or second payment type from the BPSP. In such embodiments, the payment service may partner with or otherwise enlist the BPSP to execute payments to the one or more non-qualifying suppliers while allowing the buyer to submit payment to the service provider covering substantially all or most of the buyer's suppliers using a single, preferred payment type. Additional details and description of the payment service system 100 are provided below.

In some embodiments, the disclosure describes computer-implemented method comprising receiving a payment instruction file from the issuer server 65, where the payment instruction file may include a list of suppliers associated with a buyer. The method may include comparing the list of suppliers to a list of primary merchants that accept a first payment type and generating a list of qualifying suppliers and a list of one or more non-qualifying suppliers. The qualifying suppliers may be suppliers from the list of suppliers that match a primary merchant on the list of primary merchants and the one or more non-qualifying suppliers may be suppliers from the list of suppliers that do not match a primary merchant on the list of primary merchants. The method may include comparing the list of one or more non-qualifying suppliers to a list of secondary merchants that accept a second payment type from a payment service provider that accepts the first payment type. The method may include generating a list of payment service provider recipients. The payment service provider recipients may be the one or more non-qualifying suppliers on the list of non-qualifying suppliers that may match a secondary

merchant on the list of secondary merchants. The method may include executing a payment to each of the qualifying suppliers on the list of qualifying suppliers using the first payment type, and executing a payment to the payment service provider using the first payment type so as to trigger the payment service provider to execute payments to each of the payment service provider recipients using the second payment type.

In some embodiments, the disclosure may describe a computer implemented method comprising receiving supplier data including information identifying a plurality of suppliers associated with a buyer and transaction details of one or more transactions between the buyer and each of the plurality of suppliers. The method may include comparing the plurality of suppliers with a list of primary merchants that accept a first payment type. Based on the comparison, the method may include determining a list of one or more qualifying suppliers and a list of one or more non-qualifying suppliers. The qualifying suppliers being the suppliers of the plurality of suppliers that match primary merchants on the list of primary merchants and the one or more non-qualifying suppliers being the suppliers of the plurality of suppliers that do not match any primary merchants on the list of primary merchants. The method may include comparing the list of the one or more non-qualifying suppliers with a list of secondary merchants that accept a second payment type from a BPSP that accepts the first payment type. Based on the comparison of the list of one or more non-qualifying suppliers with the list of secondary merchants, the method may include determining a list of BPSP recipients 55 that match secondary merchants on the list of secondary merchants, and executing a payment to each of the one or more qualifying suppliers using the first payment type. The method may include determining a BPSP payment amount based on the transaction details of the one or more transactions with each of the BPSP recipients 55, and executing a payment of the BPSP payment amount to the BPSP using the first payment type.

In some embodiments, various computer servers may be connected via a digital communication network. The computer servers may be one or more qualifying merchant servers 70 and one or more non-qualifying merchant servers. The computer servers may interface using the digital communication network. Connection implemented in the digital communication network may be wired or wireless, and may be via an internet or via a cellular network or any other suitable connection service. In some embodiments, any of the computer servers may alternatively be or include any number of computing devices, such as smart phones or tablet computers, mobile

computing devices, wearable mobile devices, desktop computers, laptop computers, or any other computing devices. The payment service server 85 may also be connected to the digital communication network, and may represent, for example, a payment servicer, a credit card issuer, a bank, a payment processor, or another financial institution. Various of these servers or computer entities may also be connected through a secure payment network. The secure payment network may be an electronic payment system used to accept, transmit, or process transactions made by users with payment cards for money, goods, or services, and to transfer information and funds among payment card issuers, merchants, payment card holders, payment processors, acquirers, etc. In the illustrated embodiment, at least one qualifying merchant server 70, the payment server 85, a buyer server 80, the issuer server 65, and at least one BPSP server 90 may be connected via the payment network, but it is contemplated that other entities, such as acquirers, issuers, or token managers, may be connected as well. It is contemplated that the buyer server 80 may also be connected to the one or more servers 55,70 over the digital communication network. In some embodiments, the buyer server 80 may be controlled by a business entity making purchases or other transactions with merchants controlling one or more of the qualifying or non-qualifying merchant servers, who may be acting as suppliers for the buyer's business. In some embodiments, the buyer server 80 is controlled by a bank, payment account issuer, or credit card issuer of the buyer instead of directly by the buyer entity.

In some embodiments, the payment service server 85 may be connected to the merchant servers 55, 70 either through the digital communication network, the payment network, or other connections. In some embodiments, the merchant servers 55, 70 may be associated with any type of merchant offering goods or services for purchase with payment cards, whether those purchases are online or otherwise. For online purchases, the merchant server 55, 70 or a group of servers may host a merchant website where the merchant's goods or services may be purchased by a user.

In some embodiments, the payment service system 100 may be hosted on or otherwise run by the payment service server 85 under the control of a payment service.

In some embodiments, the payment service system 100 may be hosted by another entity, such as an issuer using the issuer server 65 or a merchant using merchant servers 70, 55. In some embodiments, a buyer or a merchant/supplier may access the payment server 85 via a

computing device or server 55, 70, and may set up an account with the payment service system 100. The buyer or supplier may provide information for one or more payment accounts provided by one or more card issuers or associated with one or more merchants, or a payment service system 100 operated by the payment service. The payment service system 100 may store payment account information associated with the buyer into the buyer's account so that the payment service system 100 may monitor purchases and transactions made using each of the payment accounts

The servers 55, 70 may be able to communicate with a plurality of other servers, such as the payment service server 85, and the one or more merchant servers 55, 70. The servers 55, 70 may be able to communicate in a variety of ways. In some embodiments, the communication may be wired such as through an Ethernet cable, a USB cable or RJ6 cable. In other embodiments, the communication may be wireless such as through Wi-Fi (802.11 standard), Bluetooth, cellular communication or near field communication devices. The communication may be direct to the server or may be through a digital communication network such as cellular service, through the Internet, through a private network, through Bluetooth, etc.

In some embodiments, the payment service server 85 may be associated with the payment service system 100, and may send and receive information to and from merchant server 55, 70 associated with the suppliers of a buyer. Specifically, software may be included on the servers 55, 70 allowing notifications to be received from the payment service system 100 via the digital communications network. In some embodiments, the software may be an application through which a user may complete transactions, such as banking, money transfer, merchant purchases, etc. In some embodiments, the software may be an add-on to a web browser included on the user servers 55, 70. In some embodiments, software of the payment service system 100 may be an application installed on the server 55, 70 that allows for the use of other applications on the server, such as applications provided by payment processor, issuer, bank, merchant, email service, payment provider, etc. In some embodiments, the merchant servers 55, 70 may communicate with the payment service server 85 via one or more Application Programming Interfaces (APIs).

As illustrated in Figure 1, at step 1, the buyer server 80 may transmit supplier data to the issuer server 65, via a payment network. In some embodiments, the supplier data may be sent in the AP file, which may take a variety of formats. In some embodiments, the issuer server 65 may

be controlled by the issuer that is partnered with or otherwise enlisted by the buyer to handle business or commercial payments on behalf of the buyer. For example, the issuer server 65 may be controlled and operated by the buyer's bank and may handle payments to supplier merchants for the buyer.

At step 2 , the issuer server 65 may transmit the buyer's supplier data to the payment service server 85. In some embodiments, the supplier data may be sent directly from the buyer server 80 instead of the issuer server 65. In some embodiments, the supplier data may be transmitted via a file upload via a payment service API, or may be transmitted via any other suitable electronic method known to those skilled in the art.

At step 3 , the payment service server 85 may query a list of primary merchants in a primary merchant database 82. In some embodiments, the primary merchants may be merchants that have accepted a first (preferred) payment type in the past, or merchants that are otherwise known to accept the first payment type. In some embodiments, the first payment type may be the preferred payment type of the buyer, such as a particular credit card issued by the issuer or other payment account used to make commercial payments but may be any other suitable payment type. In some embodiments, the primary merchant database 82 may reside on the payment service server 85 or may be stored independently. In some embodiments, based on the comparison of the buyer's supplier data and the list of primary merchants, the payment service may determine a list of one or more qualifying suppliers. In other words, the qualifying suppliers may be any of the suppliers in the supplier data of the buyer that match the suppliers in the primary merchant database 82. Any additional suppliers from the supplier data that do not match suppliers on the primary merchant database 82 may be determined to be one or more non-qualifying suppliers.

At step 4, the payment service server 85 may query a list of secondary merchants in a secondary merchant database 84. In some embodiments, the list of secondary merchants may be provided by one or more BPSPs as merchants to whom the BPSP may provide payment and/or have provided payment before. In some embodiments, multiple BPSPs may provide lists of merchants or supplier directories, and the payment service may query any individual BPSP's list individually or as a group. In some embodiments, the secondary merchant database 84 may be stored in the same location as the primary merchant database 82 but in a different directory,

or may be stored in the same directory as the primary merchant database but include indication of status as secondary merchants. In some embodiments, the payment service may determine which of the non-qualifying suppliers match with the merchants in the secondary merchant database 84 by comparing the one or more non-qualifying suppliers to the list of secondary merchants. In some embodiments, the payment service may determine which of multiple BPSPs having merchant lists available to the buyer/issuer on the secondary merchant database 84 have highest number of merchants matching suppliers in the buyer's supplier data. In some embodiments, the payment service may determine the merchants from the supplier data that match with merchants on the list of secondary merchants to be BPSP recipients 55.

In some embodiments, the list of primary merchants may be found in a supplier directory of the payment service or the issuer, and the list of secondary merchants may be provided by one or more BPSPs and included into the supplier directory. In some embodiments, the secondary merchants in the supplier directory may include an indication of their status as secondary merchants accepting payment from the BPSP. In some embodiments, a list of secondary merchants may be provided by one or more BPSPs, for example, uploaded via a BPSP API. In some embodiments, the BPSPs available for any particular buyer may be those that have approved receiving payments via the first payment type, such as through the issuer partnered with the buyer. Thus, it is contemplated that the list of BPSPs may be different for each buyer depending upon the first payment type for the particular buyer and/or the issuer

At step 5a, the payment service server 85 may transmit a list of one or more qualifying suppliers to the issuer server 65. The list of qualifying suppliers may include an aggregated spend amount per supplier that may be paid using the first payment type.

At step 5b, the payment service server 85 may also send a list of BPSP recipients 55 to the issuer server 65. In some embodiments, the list of BPSP recipients 55 may include an estimate of the total amount to be paid to the BPSP based on the suppliers to be paid by the BPSP. In some embodiments, some of the suppliers in the buyer's supplier data may not match any suppliers on either primary merchants or the one or more list of secondary merchants. In such embodiments, the payment service server 85 may transmit the list of such non-compliant suppliers to the issuer server 65, and the issuer server may, at step 7, transmit the list of non-compliant suppliers to the buyer server 80. In some embodiments, the buyer or the issuer may

then determine alternative avenues for completing payments to the non-compliant suppliers. In some embodiments, the issuer server 65 may, at step 6a and step 6b, execute payments to the qualifying suppliers at the qualifying merchant servers 70 in the aggregated amounts received using the first payment type. In some embodiments, the payment service may alternatively execute payments to the qualifying merchants using the first payment type. In some embodiments, the first payment type may be a commercial payment implemented through an issuer partnered with the buyer.

At step 8, the issuer server 65 may transmit a BPSP payment to the BPSP server 90 using the first payment type. For example, the issuer server 65 may execute a credit card payment or commercial payment on behalf of the buyer to the BPSP server 90. In some embodiments, the amount paid to the BPSP may include the aggregate of the payments due to be paid to the BPSP suppliers. In some embodiments, the BPSP may charge a transaction fee to complete the corresponding payments to the BPSP recipients 55 using one or more secondary payment types. At step 9, the payment service server 85 may transmit the list of BPSP recipients 55 to the BPSP server 90 based on the comparison between the one or more non-qualifying suppliers and the list of secondary merchants. In some embodiments, the payment service server 85 may make the payment to the BPSP directly instead of the issuer server 65.

In some embodiments, the payment service server 85 may also provide to the BPSP server 90 an estimate of the revenue opportunity for the BPSP per supplier based on the supplier data and payments due. Although only one BPSP server 90 is shown in Figure.1, it is contemplated that any number of BPSP servers 90 may be included in the payment service system 100. In some embodiments, each BPSP may have a different list of merchants for providing payment. At step 10a and step 10b, the BPSP server 90 may execute payment with the one or more BPSP recipients 55 determined by the payment service using one or more second payment types. In some embodiments, the payments may be made to one or more non-qualifying merchant server controlled by the one or more BPSP recipients 55. In some embodiments, each BPSP recipient 55 may accept the same, different, or a combination of different payment types which are different than the first payment type. In some embodiments, at step 11, once the secondary payments have been made by the BPSP server 90 to the BPSP recipients 55, the BPSP server 90 may transmit a payment confirmation to the payment service server 85. In some

embodiments, the payment service server 85 may transmit the confirmation to the issuer server 65 and/or the buyer server 80.

Figure 2 illustrates a flow diagram 200 of a method of using the payment service system 100 in accordance with some embodiments of the present disclosure. At 202, the payment service (e.g., via the payment service server 85) may receive a BPSP supplier list from one or more BPSPs. In some embodiments, each BPSP may enroll with and be approved by the payment service in, for example, a BPSP matching program. In some embodiments, as part of enrollment or at other subsequent points, the BPSP may share a supplier directory, which may include the suppliers supported by the BPSP and the payment method supported by the BPSP. In some embodiments, the one or more BPSPs may upload a file with the BPSP supplier list to the payment service server 85 using a BPSP API provided by the payment service. In some embodiments, the payment service may load the one or more BPSP supplier lists into a proprietary supplier directory that may only be accessible to issuers and buyer/partners approved by each particular respective BPSP. Thus, in some embodiments, each individual BPSP may have its own unique supplier database. In some embodiments, each buyer and/or issuer partnered with a buyer may indicate, through agreement or otherwise, to allow work with one or more of the plurality of BPSPs.

At 204, the payment service may receive buyer supplier data, such as through a transmission from a buyer or an issuer partnered with a buyer. The supplier data may be received, in some embodiments, via a payment service API, which may be the same or distinguishable from the BPSP API. In some embodiments, the supplier data may be provided and received in an accounts payable file. The supplier data may include names of merchants with which the buyer has conducted business within a given time period or at any time and may also include details on the transactions with each merchant. At 206, the payment service may perform a match against a list of primary merchants known to accept a first payment type. The first payment type may be a credit card payment, a commercial payment from the issuer, etc. The suppliers that match merchants on the list of primary merchants may, at 208, be determined to be qualifying suppliers. The suppliers that do not match merchants on the list of primary merchants may, at 212, be determined to be one or more non-qualifying suppliers. At 210, the payment service may transmit a list of one or more qualifying suppliers to the issuer and/or the

buyer. In some embodiments, the list of qualifying suppliers may include an aggregated spend amount for each supplier.

At 214, the payment service may perform a secondary match of the one or more non-qualifying suppliers against a list of secondary merchants by comparing the list of one or more non-qualifying suppliers to the merchants on the second list of secondary merchants. The list of secondary merchants may be merchants that are known to accept payment from one or more BPSPs that have enrolled with the payment service and that have uploaded their respective BPSP supplier lists to the payment service. In some embodiments, the payment service may compare the one or more non-qualifying suppliers to each BPSP supplier list individually to determine a best match BPSP (e.g., the BPSP supplier list with the most matches). In some embodiments, the payment service may compare the list of one or more non-qualifying suppliers with a master list of secondary merchants from supplier lists of eligible BPSPs and determine multiple BPSPs that may be used to pay the largest quantity of suppliers. At 216, the payment service may determine whether any of the non-qualifying suppliers match any of the merchants on the list of secondary merchants. At 218, the matching merchants from the secondary merchants may be determined to be BPSP recipients. The BPSP recipients 55 may be merchants from the supplier list that may not match the primary merchant list (e.g., do not accept the first payment type) but match the secondary merchant list (e.g., accept a secondary payment from an eligible BPSP). At 220, the payment service may transmit a list of the one or more BPSP recipients 55 to the BPSP and the issuer. The list of BPSP recipients 55 may also include an estimate of the aggregate payment owed to the BPSP to complete payments to the BPSP recipients 55. In some embodiments, the issuer may authorize a payment to the BPSP using the first payment type with the authorization of the buyer. In some embodiments, the payment to the BPSP may include additional fees for the BPSP in exchange for completing the payments. In some embodiments, the transmission to the BPSP from payment server may also include an estimate of revenue opportunity per supplier for the BPSP to complete the transactions.

At 222, the payment service may determine non-compliant merchants from the buyer's supplier data but that are not on the list of primary merchants or the list of secondary merchants for any eligible BPSP.

At 224, the payment service may transmit the list of non-compliant suppliers to the issuer and the buyer. Any amounts still owed to the non-compliant suppliers may not be payable by the issuer or the BPSP and, in some embodiments, the issuer or the buyer may determine alternative payment methods for the remaining suppliers, if any.

Figure 3 illustrates a block diagram 300 of a supplier matching service 305 of the payment service system 100 in accordance with some embodiments of the present disclosure. In some embodiments, the issuer server 65 and/or the buyer server 80 may use a supplier matching service API 304 to upload an AP file 302 to the Supplier Matching Service (SMS) interface 306. The SMS interface 306 may, in some embodiments, provide access to the supplier matching service 305, which may be on the payment service server 85. The supplier matching service 305 may include a SMS engine 308 and a Global Merchant Repository (GMR) 310. The SMS engine 308 may, in some embodiments, compare the list of suppliers on the buyer's AP file 302 with the merchants in the GMR 310. In some embodiments, the GMR 310 may be a database that may include a list of merchant suppliers and the types of payments that each merchant/supplier may accept. The SMS engine 308 may match the suppliers listed in the AP file with the merchants in the GMR 310 that accept payments of a type provided by the issuer and/or preferred by the buyer. In some embodiments, the supplier matching service 305 may provide the list of matching suppliers accepting the preferred payment type along with an aggregated spend amount per supplier in the AP file.

Figure 4 illustrates a block diagram 400 of a BPSP supplier matching service 405 of the payment service system 100 in accordance with some embodiments of the present disclosure. In some embodiments, similar to in Figure. 3, the issuer server 65 and/or the buyer server 80 may use a BPSP supplier matching service API 404 to upload an AP file 402 to the SMS interface 406. In some embodiments, the issuer and/or buyer may be certified or otherwise approved by one or more BPSPs such that the one or more BPSPs in the BPSP supplier matching service may accept payments from the issuer and/or the buyer. The SMS interface 406 may, in some embodiments, provide access to the BPSP supplier matching service 405, which may be on the payment service server 85. The BPSP supplier matching service 405 may include a SMS engine 408, a GMR 410, and a BPSP supplier database 412. The SMS engine 408 may, in some embodiments, compare the list of suppliers on the buyer's AP file 402 with the merchants in the GMR 410. In some embodiments, the GMR 410 may be a database that

may include a list of merchant suppliers and the types of payments that each merchant/supplier may accept. The SMS engine 408 may match the suppliers listed in the AP file with the merchants in the GMR 410 that accept payments of a type provided by the issuer and/or preferred by the buyer. In some embodiments, the BPSP supplier matching service 405 may provide the list of matching suppliers accepting the preferred payment type along with an aggregated spend amount per supplier in the AP file.

In some embodiments, the SMS engine 408 may then perform a secondary match against the BPSP supplier database 412 to determine whether any suppliers in the AP file 402 match the merchants in the BPSP supplier database 412 for which the BPSP may provide payment on behalf of the buyer. In some embodiments, the SMS engine 408 may follow BPSP rules 414, for example, when determining whether a particular BPSP will accept payment from the buyer/issuer or whether the BPSP will be able to provide payment to a supplier. In some embodiments, for the suppliers from the AP file that match with suppliers in the BPSP supplier database 412 (e.g., BPSP recipients), the BPSP supplier matching service 405 may return, through the SMS interface 406, an estimate of the revenue opportunity per supplier. For example, the SMS engine 408 may determine that a BPSP may earn a particular amount of money in fees for executing payments on behalf of the buyer/issuer.

Figures 5 illustrates a block diagram 500 of a BPSP payment routing system 501 of the payment service system 100 in accordance with some embodiments of the present disclosure. In some embodiments, the BPSP payment routing system 501 may be used to route payment to suppliers after the BPSP supplier matching service 405 described in reference to Figure. 4. Figure.4 has been used to determine suppliers that may receive direct commercial payments with a first payment type and BPSP recipients 55 who may receive payment through one or more BPSPs. In other embodiments, the BPSP payment routing system 501 may incorporate at least portions of the BPSP supplier matching service 405 to more efficiently routed payments. Similar to in Figure. 4, the issuer server 65 and/or the buyer server 80 may use a BPSP supplier matching service API 504 to upload an AP file 502 to a payment gateway interface 506. In some embodiments, the issuer and/or buyer may be certified or otherwise approved by one or more BPSPs such that the one or more BPSPs in the BPSP payment routing system 501 may accept payments from the issuer and/or the buyer. In some embodiments, the payment gateway interface 506 may receive payment instructions across all payment types

from banks, certified partner buyers, issuers, etc. In some embodiments, the suppliers may have previously been validated, for example, using the BPSP supplier matching service 405 as either a supplier accepting a first payment type or a supplier of an enrolled BPSP (e.g. BPSP recipient) for the particular financial institution, issuer buyer, etc. In some embodiments, the payment routing engine 505 may send a payment instruction file to an SMS engine 508, such as the BPSP supplier matching service 405. The SMS engine 508 may return a supplier acceptance profile, which may indicate each supplier in the AP file as a qualifying supplier (e.g., accepts a first payment type, direct commercial payment, etc.), a BPSP recipient (e.g., accepts a second payment type from an eligible BPSP), or an exception 514 (e.g., non-compliant supplier). Based on the supplier acceptance profile, the payment routing engine 505 may route payments on behalf of the buyer. In other words, the payment routing engine 505 may pay qualifying suppliers 510 directly using a first payment type, and may pay one or more BPSP providers 512 using the first payment type. The one or more BPSP providers 512 may then execute payments to the BPSP recipients 55 using one or more second payment types on behalf of the buyer. In some embodiments, a list of non-compliant suppliers (e.g., exceptions 514) may be transmitted back through the payment gateway interface 506 to the buyer/issuer if no routing is available for those suppliers. In some embodiments, the payment service may complete the routing of payments automatically upon receiving an AP file including a list of suppliers and transaction details.

Advantages of the present disclosure

The payment service system 100 provides efficient payments to a plurality of supplier merchants in the course of doing business or trading. A practical application of the payment service system 100 is to allow a buyer to make substantially all or most of its business payments through a single payment type, which may significantly increase payment efficiency. The payment service system 100 also increase the value and/or number of payments being completed using the first payment method, which may provide additional business to the payment processor that process the payments and operate the payment network.

Computing System

Figure 6 illustrates a block diagram of an exemplary computer system 600 for implementing embodiments consistent with the present disclosure. In an embodiment, the computer system

600 is used to implement the payment service system 100 for coordinating of payment obligations between buyers and suppliers. The payment service system 100 facilitates a buyer to make substantially all or most of its business payments through a single payment type. The computer system 600 may include a central processing unit (“CPU” or “processor”) 602. The processor 602 may include at least one data processor for executing processes in Virtual Storage Area Network. The processor 602 may include specialized processing units such as, integrated system (bus) controllers, memory management control units, floating point units, graphics processing units, digital signal processing units, etc.

The processor 602 may be disposed in communication with one or more input/output (I/O) devices 609 and 610 via I/O interface 601. The I/O interface 601 may employ communication protocols/methods such as, without limitation, audio, analog, digital, monaural, RCA, stereo, IEEE-1394, serial bus, universal serial bus (USB), infrared, PS/2, BNC, coaxial, component, composite, digital visual interface (DVI), high-definition multimedia interface (HDMI), radio frequency (RF) antennas, S-Video, VGA, IEEE 802.n /b/g/n/x, Bluetooth, cellular (e.g., code-division multiple access (CDMA), high-speed packet access (HSPA+), global system for mobile communications (GSM), long-term evolution (LTE), WiMax, or the like), etc.

Using the I/O interface 601, the computer system 600 may communicate with one or more I/O devices 609 and 610. For example, the input devices 609 may be an antenna, keyboard, mouse, joystick, (infrared) remote control, camera, card reader, fax machine, dongle, biometric reader, microphone, touch screen, touchpad, trackball, stylus, scanner, storage device, transceiver, video device/source, etc. The output devices 610 may be a printer, fax machine, video display (e.g., cathode ray tube (CRT), liquid crystal display (LCD), light-emitting diode (LED), plasma, Plasma Display Panel (PDP), Organic light-emitting diode display (OLED) or the like), audio speaker, etc.

The processor 602 may be disposed in communication with a communication network 611 via a network interface 603. The network interface 603 may communicate with the communication network 611. The network interface 303 may employ connection protocols including, without limitation, direct connect, Ethernet (e.g., twisted pair 10/100/1000 Base T), transmission control protocol/internet protocol (TCP/IP), token ring, IEEE 802.11a/b/g/n/x, etc. The communication network 611 may include, without limitation, a direct interconnection, local

area network (LAN), wide area network (WAN), wireless network (e.g., using Wireless Application Protocol), the Internet, etc. Using the network interface 603 and the communication network 611, the computer system 600 may communicate with merchant server's 612,613, buyer server 614, issuer server 615, and BPSP server 616 via communication network 611 to provide preference based payment transaction between buyer and supplier. The computer system 600 may communicate with the primary merchant database 617 and the secondary merchant database 618 via communication network 611. In some embodiments, the primary merchant database 617 and the secondary merchant database 618 may reside inside the computer system 600 or may be stored independently. The network interface 603 may employ connection protocols include, but not limited to, direct connect, Ethernet (e.g., twisted pair 10/100/1000 Base T), transmission control protocol/internet protocol (TCP/IP), token ring, IEEE 802.11a/b/g/n/x, etc.

The communication network 611 includes, but is not limited to, a direct interconnection, an e-commerce network, a peer to peer (P2P) network, local area network (LAN), wide area network (WAN), wireless network (e.g., using Wireless Application Protocol), the Internet, Wi-Fi, and such. The first network and the second network may either be a dedicated network or a shared network, which represents an association of the different types of networks that use a variety of protocols, for example, Hypertext Transfer Protocol (HTTP), Transmission Control Protocol/Internet Protocol (TCP/IP), Wireless Application Protocol (WAP), etc., to communicate with each other. Further, the first network and the second network may include a variety of network devices, including routers, bridges, servers, computing devices, storage devices, etc.

In some embodiments, the processor 602 may be disposed in communication with a memory 605 (e.g., RAM, ROM, etc. not shown in **Figure 6**) via a storage interface 604. The storage interface 604 may connect to memory 605 including, without limitation, memory drives, removable disc drives, etc., employing connection protocols such as, serial advanced technology attachment (SATA), Integrated Drive Electronics (IDE), IEEE-1394, Universal Serial Bus (USB), fibre channel, Small Computer Systems Interface (SCSI), etc. The memory drives may further include a drum, magnetic disc drive, magneto-optical drive, optical drive, Redundant Array of Independent Discs (RAID), solid-state memory devices, solid-state drives, etc.

The memory 605 may store a collection of program or database components, including, without limitation, user interface 606, an operating system 607, web browser 608 etc. In some embodiments, computer system 600 may store user/application data, such as, the data, variables, records, etc., as described in this disclosure. Such databases may be implemented as fault-tolerant, relational, scalable, secure databases such as Oracle ® or Sybase®.

The operating system 607 may facilitate resource management and operation of the computer system 600. Examples of operating systems include, without limitation, APPLE MACINTOSH® OS X, UNIX®, UNIX-like system distributions (E.G., BERKELEY SOFTWARE DISTRIBUTION™ (BSD), FREEBSD™, NETBSD™, OPENBSD™, etc.), LINUX DISTRIBUTIONS™ (E.G., RED HAT™, UBUNTU™, KUBUNTU™, etc.), IBM™ OS/2, MICROSOFT™ WINDOWS™ (XP™, VISTA™/7/8, 10 etc.), APPLE® IOS™, GOOGLE® ANDROID™, BLACKBERRY® OS, or the like.

In some embodiments, the computer system 600 may implement a web browser 608 stored program component. The web browser 608 may be a hypertext viewing application, such as Microsoft Internet Explorer, Google Chrome, Mozilla Firefox, Apple Safari, etc. Secure web browsing may be provided using Hypertext Transport Protocol Secure (HTTPS), Secure Sockets Layer (SSL), Transport Layer Security (TLS), etc. Web browsers 608 may utilize facilities such as AJAX, DHTML, Adobe Flash, JavaScript, Java, Application Programming Interfaces (APIs), etc. In some embodiments, the computer system 600 may implement a mail server stored program component. The mail server may be an Internet mail server such as Microsoft Exchange, or the like. The mail server may utilize facilities such as ASP, ActiveX, ANSI C++/C#, Microsoft .NET, Common Gateway Interface (CGI) scripts, Java, JavaScript, PERL, PHP, Python, WebObjects, etc. The mail server may utilize communication protocols such as Internet Message Access Protocol (IMAP), Messaging Application Programming Interface (MAPI), Microsoft Exchange, Post Office Protocol (POP), Simple Mail Transfer Protocol (SMTP), or the like. In some embodiments, the computer system 600 may implement a mail client stored program component. The mail client may be a mail viewing application, such as Apple Mail, Microsoft Entourage, Microsoft Outlook, Mozilla Thunderbird, etc.

Furthermore, one or more computer-readable storage media may be utilized in implementing embodiments consistent with the present disclosure. A computer-readable storage medium

refers to any type of physical memory on which information or data readable by a processor 602 may be stored. Thus, a computer-readable storage medium may store instructions for execution by one or more processors, including instructions for causing the processor(s) 602 to perform steps or stages consistent with the embodiments described herein. The term “computer-readable medium” should be understood to include tangible items and exclude carrier waves and transient signals, i.e., be non-transitory. Examples include Random Access Memory (RAM), Read-Only Memory (ROM), volatile memory, non-volatile memory, hard drives, Compact Disc (CD) ROMs, DVDs, flash drives, disks, and any other known physical storage media.

The described operations may be implemented as a method, system or article of manufacture using standard programming and/or engineering techniques to produce software, firmware, hardware, or any combination thereof. The described operations may be implemented as code maintained in a “non-transitory computer readable medium”, where a processor 602 may read and execute the code from the computer readable medium. The processor 602 is at least one of a microprocessor and a processor capable of processing and executing the queries. A non-transitory computer readable medium may include media such as magnetic storage medium (e.g., hard disk drives, floppy disks, tape, etc.), optical storage (CD-ROMs, DVDs, optical disks, etc.), volatile and non-volatile memory devices (e.g., EEPROMs, ROMs, PROMs, RAMs, DRAMs, SRAMs, Flash Memory, firmware, programmable logic, etc.), etc. Further, non-transitory computer-readable media may include all computer-readable media except for a transitory. The code implementing the described operations may further be implemented in hardware logic (e.g., an integrated circuit chip, Programmable Gate Array (PGA), Application Specific Integrated Circuit (ASIC), etc.).

The illustrated steps are set out to explain the exemplary embodiments shown, and it should be anticipated that ongoing technological development will change the manner in which particular functions are performed. These examples are presented herein for purposes of illustration, and not limitation. Further, the boundaries of the functional building blocks have been arbitrarily defined herein for the convenience of the description. Alternative boundaries can be defined so long as the specified functions and relationships thereof are appropriately performed. Alternatives (including equivalents, extensions, variations, deviations, etc., of those described herein) will be apparent to persons skilled in the relevant art(s) based on the teachings contained

herein. Such alternatives fall within the scope and spirit of the disclosed embodiments. Also, the words "comprising," "having," "containing," and "including," and other similar forms are intended to be equivalent in meaning and be open ended in that an item or items following any one of these words is not meant to be an exhaustive listing of such item or items, or meant to be limited to only the listed item or items. It must also be noted that as used herein and in the appended claims, the singular forms "a," "an," and "the" include plural references unless the context clearly dictates otherwise.

Furthermore, one or more computer-readable storage media may be utilized in implementing embodiments consistent with the present disclosure. A computer readable storage medium refers to any type of physical memory on which information or data readable by a processor may be stored. Thus, a computer readable storage medium may store instructions for execution by one or more processors, including instructions for causing the processor(s) to perform steps or stages consistent with the embodiments described herein. The term "computer readable medium" should be understood to include tangible items and exclude carrier waves and transient signals, i.e., are non-transitory. Examples include random access memory (RAM), read-only memory (ROM), volatile memory, non-volatile memory, hard drives, CD ROMs, DVDs, flash drives, disks, and any other known physical storage media.

Finally, the language used in the specification has been principally selected for readability and instructional purposes, and it may not have been selected to delineate or circumscribe the inventive subject matter. Accordingly, the disclosure of the embodiments of the disclosure is intended to be illustrative, but not limiting, of the scope of the disclosure.

With respect to the use of substantially any plural and/or singular terms herein, those having skill in the art can translate from the plural to the singular and/or from the singular to the plural as is appropriate to the context and/or application. The various singular/plural permutations may be expressly set forth herein for sake of clarity.

Essential concepts:

Concept.1: A computer-implemented method comprising:

receiving supplier data from an issuer server, the supplier data including information identifying suppliers associated with a buyer;

comparing the suppliers with a list of primary merchants that accept a first payment type;

based on the comparison, determining a list of one or more qualifying suppliers and a list of one or more non-qualifying suppliers, the qualifying suppliers being the suppliers matching primary merchants on the list of primary merchants and the non-qualifying suppliers being the suppliers without a match from the list of primary merchants;

transmitting the list of one or more qualifying suppliers to the issuer server; comparing the list of one or more non-qualifying suppliers with a list of secondary merchants that accept a second payment type from a payment service provider that accepts the first payment type;

based on the comparison of the list of one or more non-qualifying suppliers with the list of secondary merchants, determining a list of payment service provider recipients that match secondary merchants on the list of secondary merchants; and

transmitting the list of payment service provider recipients to the issuer server, wherein the method is performed using one or more processors.

Concept.2: The computer-implemented method further comprising receiving the supplier data via an Application Programming Interface (API). The qualifying suppliers are entities that accept commercial payments. The supplier data is received via a payment instruction file. The first payment type is a commercial payment and the second payment type is a non-commercial payment.

Concept.3: The computer-implemented method further comprising:

determining a list of non-compliant suppliers, the non-compliant suppliers being the suppliers associated with the buyer without a match on either the list of primary merchants or the list of secondary merchants; and

transmitting the list of non-compliant suppliers to the issuer server;

executing a payment to each of the qualifying suppliers on the list of one or more qualifying suppliers using the first payment type;

determining an aggregated spend amount per qualifying supplier and transmitting the aggregated spend amount to the issuer server;

executing a payment to the payment service provider using the first payment type so as to trigger the payment service provider to execute payments to the payment service provider recipients using the second payment type;

determining an estimated revenue opportunity per payment service provider recipients from the list of payment service provider recipients and transmitting the estimated revenue opportunity to the issuer server.

Concept 4: The computer-implemented method further comprising:

receiving a payment instruction file from an issuer server, the payment instruction file including a list of suppliers associated with a buyer;

comparing the list of suppliers to a list of primary merchants, the primary merchants being merchants that accept a first payment type;

generating a list of qualifying suppliers and a list of non-qualifying suppliers, wherein qualifying suppliers are suppliers from the list of suppliers that match a primary merchant on the list of primary merchants and the non-qualifying suppliers are suppliers from the list of suppliers that do not match a primary merchant on the list of primary merchants;

comparing the list of non-qualifying suppliers to a list of secondary merchants, the secondary merchants being merchants that accept a second payment type from a payment service provider that accepts the first payment type;

generating a list of payment service provider recipients, the payment service provider recipients being the non-qualifying suppliers on the list of non-qualifying suppliers that match a secondary merchant on the list of secondary merchants;

executing a payment to each of the qualifying suppliers on the list of qualifying suppliers using the first payment type; and

executing a payment to the payment service provider using the first payment type so as to trigger the payment service provider to execute payments to each of the payment service provider recipients using the second payment type, wherein the method is performed using one or more processors.

Concept.5: The computer-implemented method comprising:

receiving supplier data including information identifying a plurality of suppliers associated with a buyer and transaction details of one or more transactions between the buyer and each of the plurality of suppliers;

comparing the plurality of suppliers with a list of primary merchants that accept a first payment type;

based on the comparison, determining a list of one or more qualifying suppliers and a list of one or more non-qualifying suppliers, the qualifying suppliers being the suppliers of the plurality of suppliers that match primary merchants on the list of primary merchants and the non-qualifying suppliers being the suppliers of the plurality of suppliers that do not match any primary merchants on the list of primary merchants;

comparing the list of the one or more non-qualifying suppliers with a list of secondary merchants that accept a second payment type from a business payment service provider (BPSP) that accepts the first payment type;

based on the comparison of the list of one or more non-qualifying suppliers with the list of secondary merchants, determining a list of BPSP recipients that match secondary merchants on the list of secondary merchants;

executing a payment to each of the one or more qualifying suppliers using the first payment type;

determining a BPSP payment amount based on the transaction details of the one or more transactions with each of the BPSP recipients; and

executing a payment of the BPSP payment amount to the BPSP using the first payment type, wherein the method is performed using one or more processors.

SYSTEM AND METHOD FOR PROVIDING PREFERENCE BASED PAYMENT
TRANSACTION BETWEEN BUYER AND SUPPLIER

ABSTRACT

A method comprising receiving supplier data from an issuer server and comparing supplier data to primary merchants that accept a first payment type. Based on the comparison, the method includes determining qualifying suppliers matching primary merchants and non-qualifying suppliers without a match of primary merchants. The method includes comparing the non-qualifying suppliers with secondary merchants accepting a second payment type from a payment service provider that accepts the first payment type. Based on the comparison, the method includes determining BPSP recipients matching secondary merchants.

Figure 1

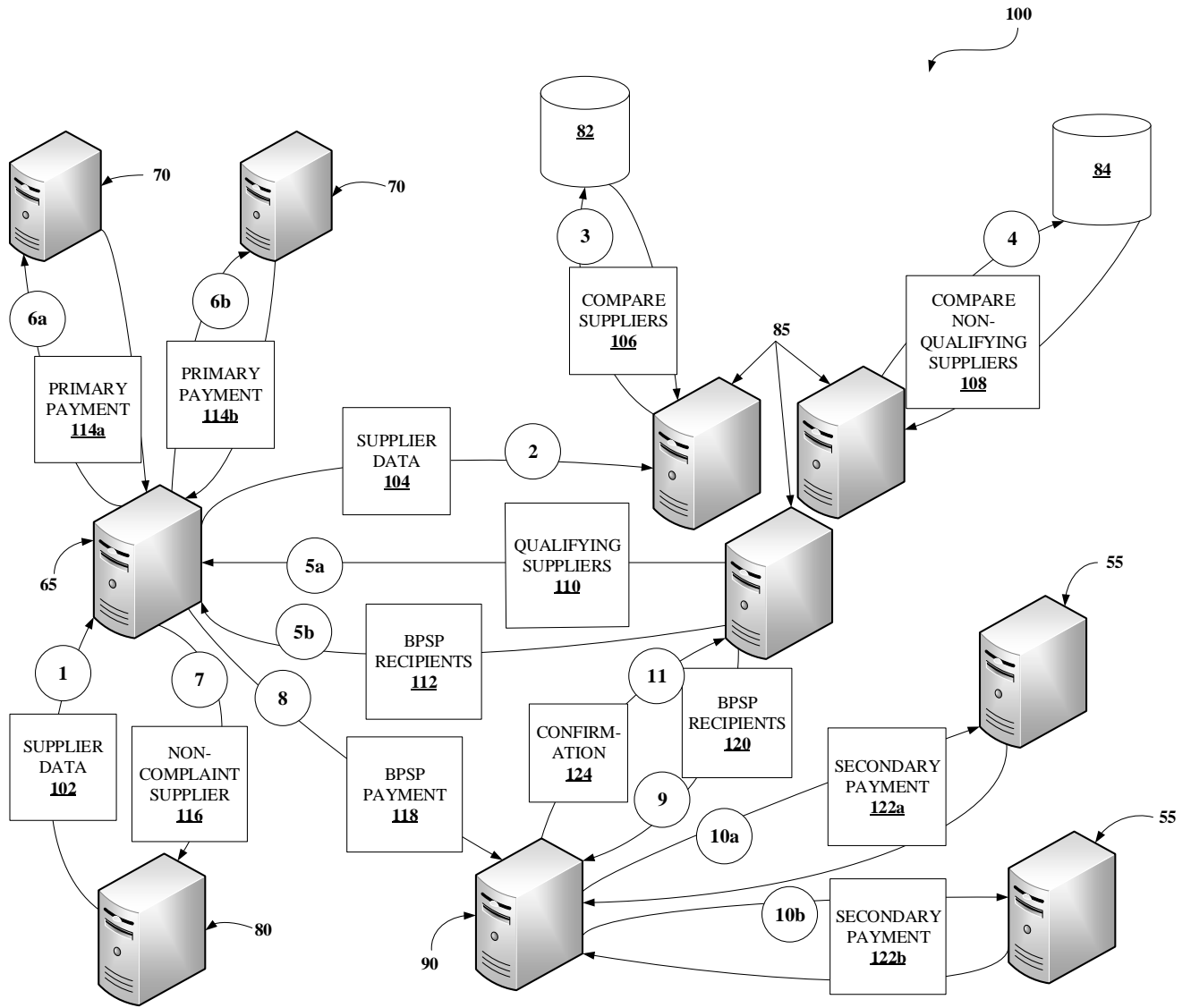


Figure 1

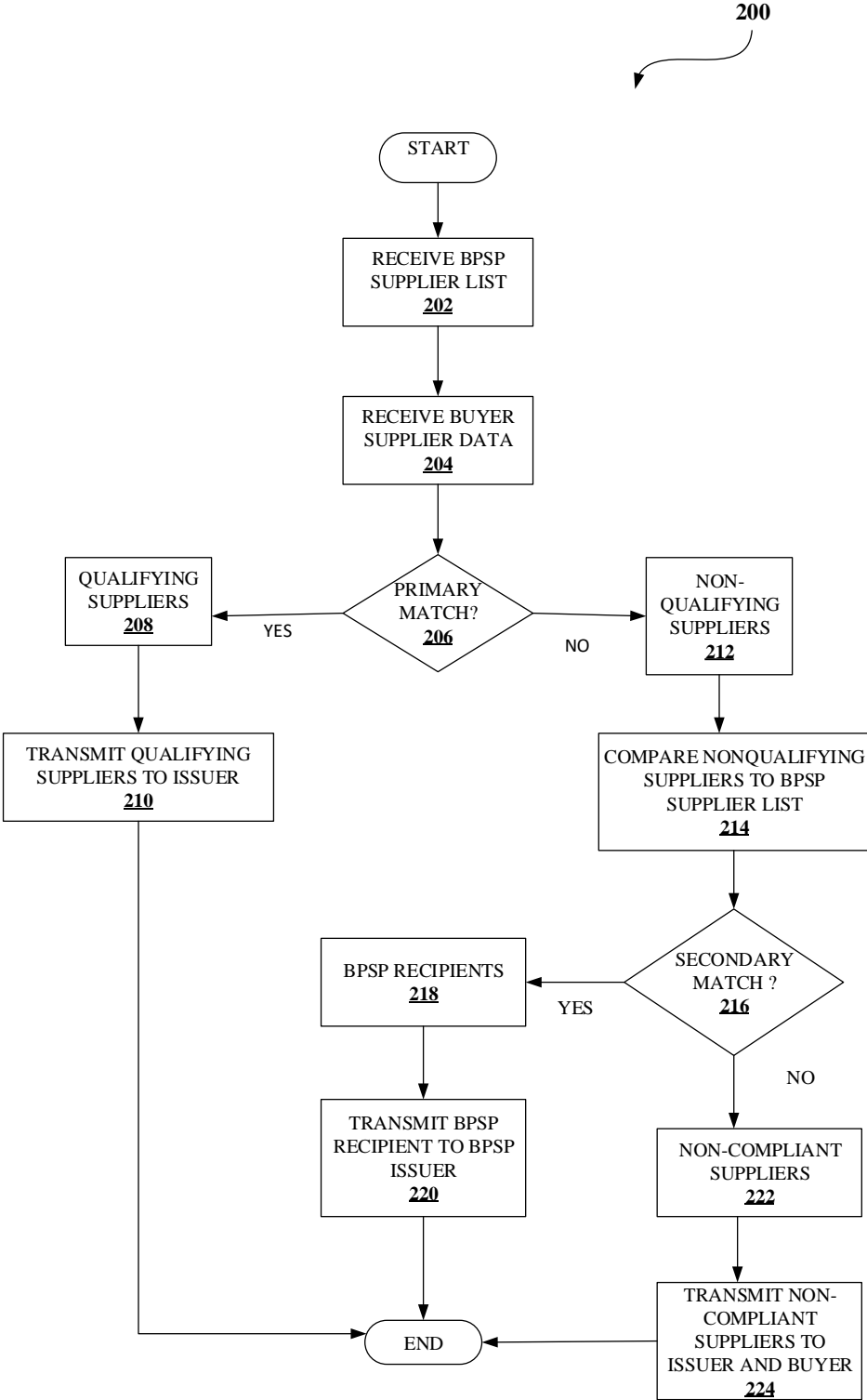


Figure 2

3/6

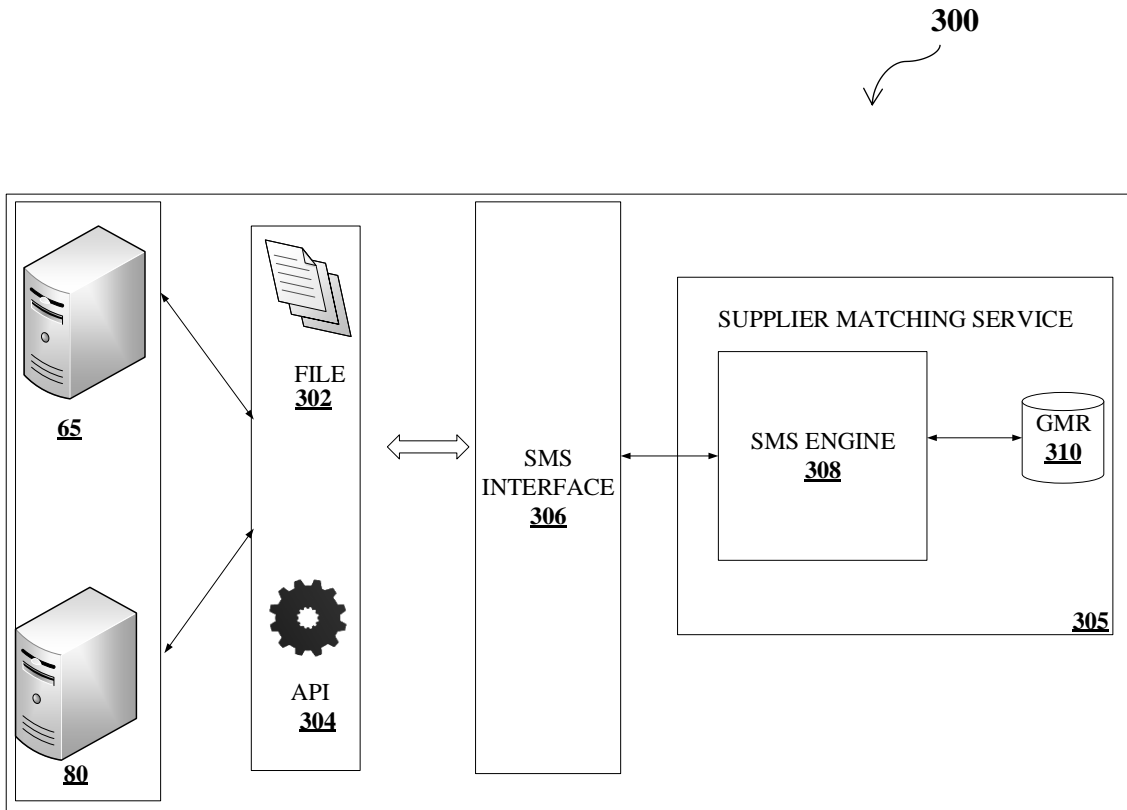


Figure 3

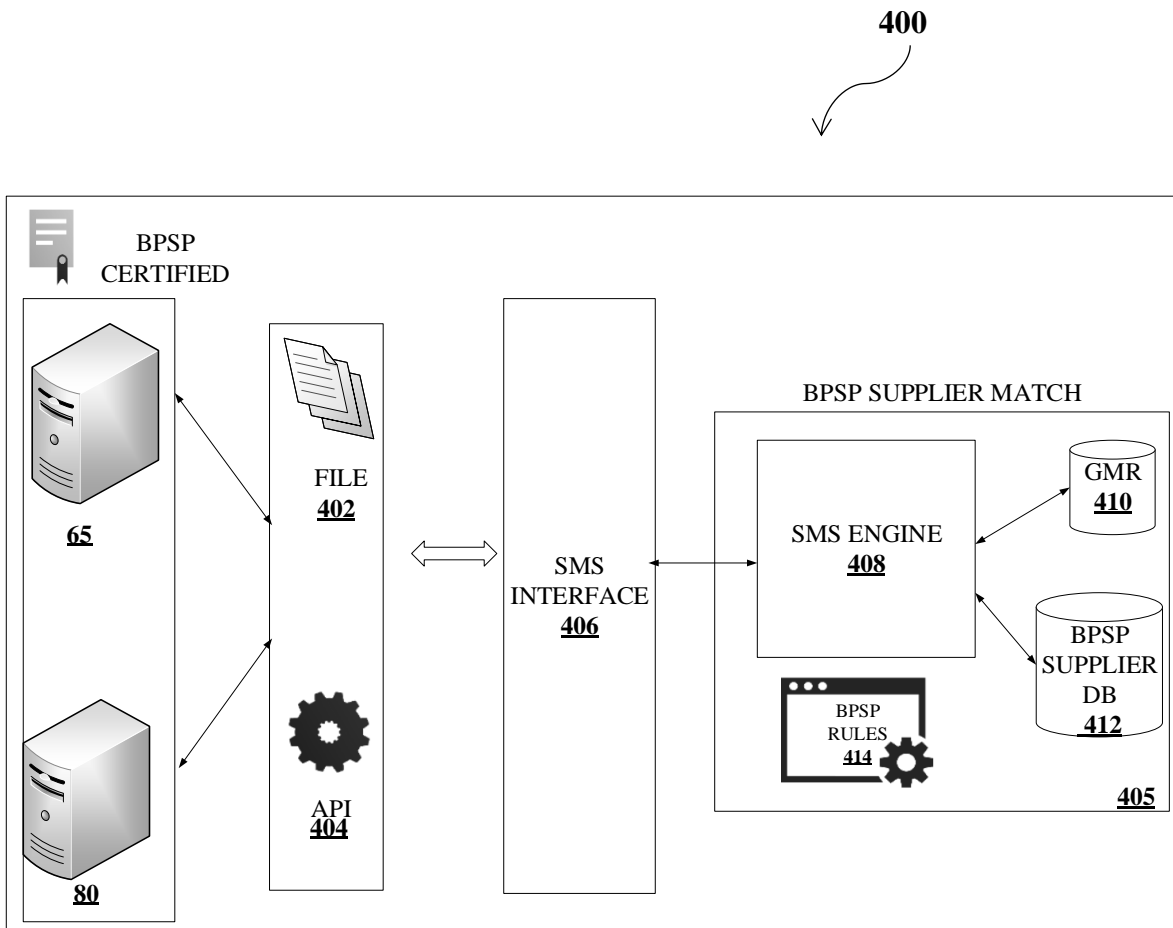


Figure 4

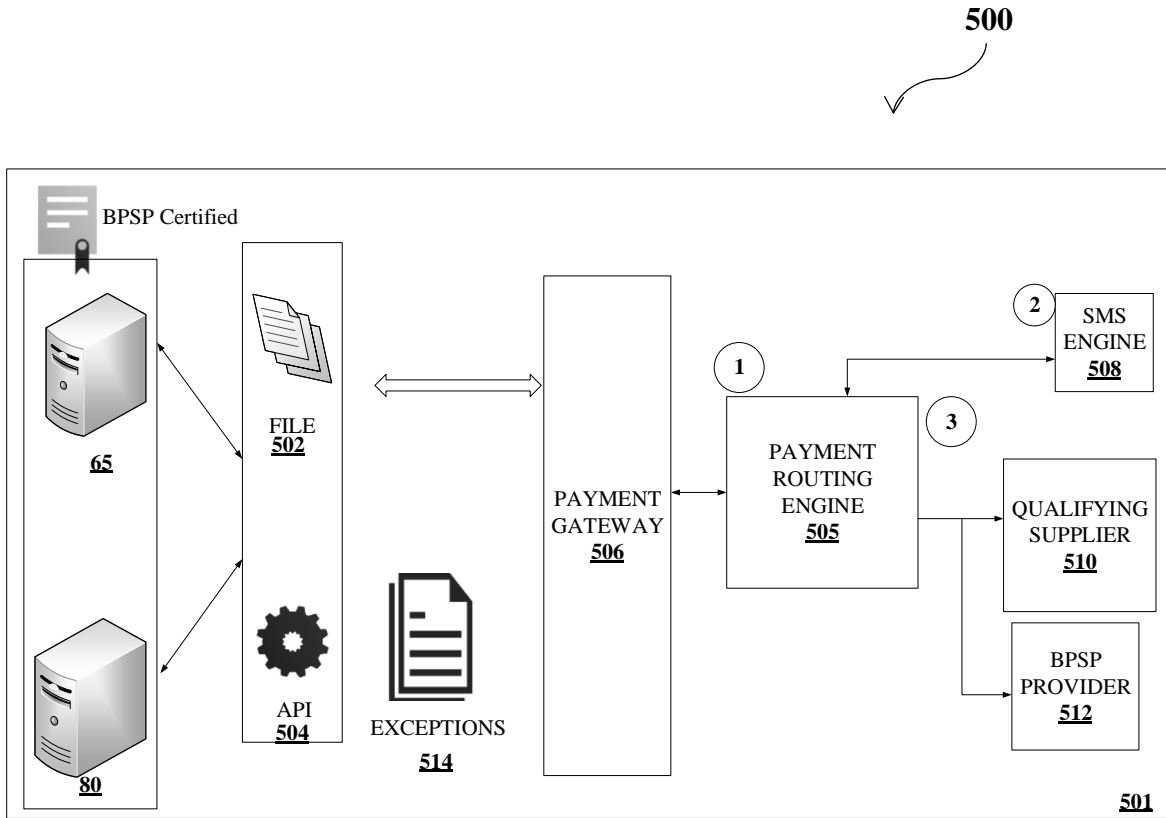


Figure 5

6/6

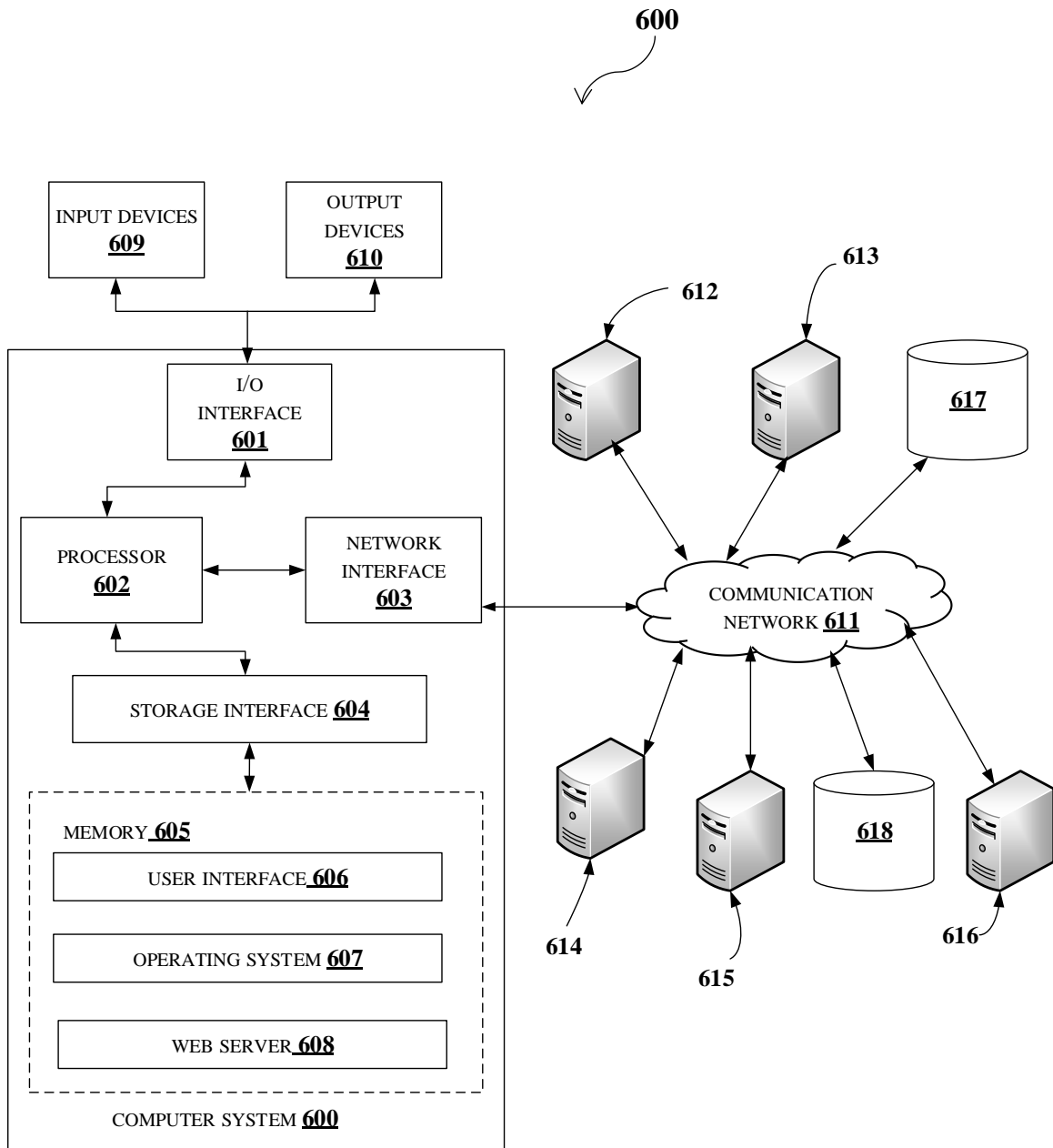


Figure 6