# CONDUCTING A TRANSACTION BETWEEN A SERVICE PROVIDER AND A MERCHANT

## TECHNICAL FIELD OF DISCLOSURE

[001] The following discloses arrangements for conducting a transaction between a telecommunication service provider and a merchant.

## BACKGROUND

[002] Transactions made over the Internet typically require for a consumer to have a payment card; or a digital wallet, which is an account registered with a payment service provider (such as PayPal™) that is linked to a source of funds, that can make the payment for such transactions. An example of such transactions would be the purchase of software applications that are designed to operate in a smart phone, the transaction being performed using the smart phone.

[003] There exists a pool of consumers who have access to a smart phone, but do not have access to a payment card or cannot enroll with a payment service provider. To tap this pool of consumers, several software application merchants have tied up with telecommunication service providers to offer direct carrier billing. Direct carrier billing is a method of payment that charges payment directly to a consumer's telephone bill. However, for a telecommunication service provider to provide direct carrier billing services to subscribers, its systems have to be integrated with the merchant systems. Such integration is complicated and time consuming, which could discourage a telecommunication service provider from offering a direct carrier billing service, since the cost to undertake the integration may outweigh the revenue benefits obtained from offering this service.

[004] There thus is a need to more readily have a service provider, such as a telecommunication service provider, allow their subscribers to make online transactions on the basis of their registration with the service provider.

## SUMMARY

[004a] According to one aspect of the disclosure, there is provided a method by a system comprising a server network, a service provider server and a merchant

server for facilitating a transaction between a service provider corresponding to the service provider server and a merchant corresponding to the merchant server, the method comprising: generating, by the server network, an account number to a subscriber registered with the service provider, the account number corresponding to a registration ID that the subscriber has with the service provider and suitable for making a transaction with the merchant; generating, by the server network, a unique reference corresponding to the account number, the unique reference mapping the subscriber to the account number; transmitting, by the server network, upon receiving use of the account number for the transaction, the unique reference to the service provider server; identifying, by the service provider server, the subscriber to which the account number belongs, in response to the transmitted unique reference; and associating, by the service provider server, the transaction to the registration ID of the identified subscriber so as to facilitate the transaction with the merchant.

[004b] According to one aspect of the disclosure, there is provided a service provider server for facilitating a transaction with a merchant corresponding to a merchant server, the service provider server corresponding to a service provider and comprising: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the service provider server at least to: receive a unique reference generated corresponding to an account number suitable for making a transaction with the merchant, the account number being generated to a subscriber registered with the service provider and corresponding to a registration ID that the subscriber has with the service provider, the unique reference mapping the account number to the subscriber, identify the subscriber to which the account number belongs in response to the received unique reference, and associate the transaction to the registration ID of the identified subscriber so as to facilitate the transaction with the merchant.

[004c] According to one aspect of the disclosure, there is provided a server network for facilitating a transaction between a service provider corresponding to a service provider server and a merchant corresponding to a merchant server, the server network comprising: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the server

network at least to: generate a unique reference that is used to map an account number generated corresponding to a subscriber registered with the service provider, the account number corresponding to a registration ID that the subscriber has with the service provider and suitable for making a transaction with the merchant, and transmit, upon receiving use of the account number for the transaction, the unique reference to the service provider server, wherein the subscriber to which the account number belongs is identified by the service provider server in response to the transmitted unique reference, and the transaction is associated by the service provider server to the registration ID of the identified subscriber so as to facilitate the transaction between the service provider and the merchant.

[004d] According to one aspect of the disclosure, there is provided a system comprising a server network, a service provider server, and a merchant server for facilitating a transaction between a service provider corresponding to the service provider server and a merchant corresponding to the merchant server, wherein the server network comprises: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the server network at least to generate a unique reference that is used to map an account number generated to a subscriber registered with the service provider, the account number corresponding to a registration ID that the subscriber has with the service provider and suitable for making a transaction with the merchant; and transmit, upon receiving use of the account number for the transaction, the unique reference to the service provider server; and wherein the service provider server comprises: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the service provider server at least to receive the unique reference; identify the subscriber to which the account number belongs in response to the received unique reference; associate the transaction to the registration ID of the identified subscriber so as to facilitate the transaction with the merchant.

[005] According to some examples of the disclosure, there is provided a method for conducting a transaction between a service provider and a

merchant, the method comprising: issuing an account number against which a transaction with the

merchant is made, wherein the account number belongs to a subscriber registered with the service provider; assigning a unique reference used to map the subscriber to the account number; and transmitting, upon receiving use of the account number for the transaction, the unique reference and details of the transaction to the service provider, wherein the unique reference is processed against a database of unique references to identify the subscriber to which the account number belongs, for the service provider to associate the transaction to the identified subscriber, based on the details of the transaction.

[006] According to some examples of the disclosure, there is provided a service provider server for conducting a transaction with a merchant, the service provider server comprising: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the service provider server at least to: receive details of the transaction and a unique reference assigned to an account number against which the transaction is made, the unique reference used to map the account number to a subscriber registered with the service provider to which the account number belongs, process the unique reference against a database of unique references to identify the subscriber to which the account number belongs, and associate the details of the transaction to the identified subscriber.

[007] According to some examples of the disclosure, there is provided a server network for facilitating a transaction between a service provider and a merchant, the server comprising: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the server network at least to: assign a unique reference that is used to map an account number issued to a subscriber registered with the service provider, wherein a transaction with the merchant is made against the account number, and transmit, upon receiving use of the account number for the transaction, the unique reference and details of the transaction to the service provider, wherein the unique reference is processed against a database of unique references to identify the subscriber to which the account number belongs, for the service provider to associate the details of the transaction to the identified subscriber.

[008] According to some examples of the disclosure, there is provided a system for conducting a transaction between a service provider and a merchant, the system comprising: a server network comprising: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the server network at least to assign a unique reference that is used to map an account number issued to a subscriber registered with the service provider, wherein a transaction with the merchant is made against the account number; and transmit, upon receiving use of the account number for the transaction, the unique reference and details of the transaction to the service provider; and a service provider server comprising: at least one processor; and at least one memory including computer program code; the at least one memory and the computer program code configured to, with the at least one processor, cause the service provider server at least to receive the details of the transaction and the unique reference; process the unique reference against a database of unique references to identify the subscriber to which the account number belongs; and associate the details of the transaction to the identified subscriber.

## BRIEF DESCRIPTION OF THE DRAWINGS

[009] Embodiments of the disclosure will be better understood and readily apparent to one of ordinary skill in the art from the following written description, by way of example only, and in conjunction with the drawings, in which:

[010] Figure 1 shows a schematic of a system for conducting a transaction between a service provider, such as a telecommunication service provider, and a merchant.

[011] Figure 2 shows an exemplary computing device to realize the server, which facilitates the transaction between the telecommunication service provider and the merchant, shown in Figure 1.

[012] Figure 3 shows a flowchart depicting steps of a method that allows a service provider to perform a transaction with a merchant.

[013] Figure 4 shows a schematic of the server that facilitates the transaction between the telecommunication service provider and the merchant in the system of Figure 1.

CLAIMS

1. A method by a system comprising a server network, a service provider server and a merchant server for facilitating a transaction between a service provider corresponding to the service provider server and a merchant corresponding to the merchant server, the method comprising:

generating, by the server network, an account number to a subscriber registered with the service provider, the account number corresponding to a registration ID that the subscriber has with the service provider and suitable for making a transaction with the merchant;

generating, by the server network, a unique reference corresponding to the account number, the unique reference mapping the subscriber to the account number;

transmitting, by the server network, upon receiving use of the account number for the transaction, the unique reference to the service provider server;

identifying, by the service provider server, the subscriber to which the account number belongs, in response to the transmitted unique reference; and

associating, by the service provider server, the transaction to the registration ID of the identified subscriber so as to facilitate the transaction with the merchant.

2. The method of claim 1, wherein the server network comprises a server and a computing infrastructure, and wherein generating the account number, generating the unique reference and transmitting the unique reference are performed by the computing infrastructure.

3. The method of claim 1 or 2, further comprising receiving, by the server network, a request from the service provider server for generating the account number, wherein the account number is generated by the server network in response to the request.

4. The method of any of the preceding claims, further comprising replacing, by the server network, the account number with the unique reference before

transmitting the unique reference and details of the transaction to the service provider server.

5. The method of any of the preceding claims, further comprising determining, by the service provider server, a fund, to which the transaction is associated, from the format of the unique reference.

6. The method of claim 5, wherein the fund is a prepaid balance or a credit line.

7. The method of any of the preceding claims, wherein the format of the unique reference depends on the service provider to which the subscriber is registered.

8. The method of any of the preceding claims, further comprising authenticating that the subscriber is registered with the service provider before generating the account number .

9. The method of any of the preceding claims, wherein billing of the transaction to the identified subscriber comprises including, by the service provider server, a buffer for currency conversion when the transaction is in a currency different from the one used by the server network that facilitates the transaction between the merchant and the service provider.

10. The method of any of the preceding claims, wherein the account number is a virtual card number that is used by an installed application in a mobile device.

11. The method of any of the preceding claims, wherein the unique reference comprises any one or more of numbers, letters or symbols.

12. The method of any of the preceding claims, wherein the service provider is any one or more of a telecommunication service provider, a financial services provider or an online service provider.

13. A service provider server for facilitating a transaction with a merchant corresponding to a merchant server, the service provider server corresponding to a service provider and comprising:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with the at least one processor, cause the service provider server at least to:

receive a unique reference generated corresponding to an account number suitable for making a transaction with the merchant, the account number being generated to a subscriber registered with the service provider and corresponding to a registration ID that the subscriber has with the service provider, the unique reference mapping the account number to the subscriber,

identify the subscriber to which the account number belongs in response to the received unique reference, and

associate the transaction to the registration ID of the identified subscriber so as to facilitate the transaction with the merchant.

14. A server network for facilitating a transaction between a service provider corresponding to a service provider server and a merchant corresponding to a merchant server, the server network comprising:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with the at least one processor, cause the server network at least to:

generate a unique reference that is used to map an account number generated corresponding to a subscriber registered with the service provider, the account number corresponding to a registration ID that the subscriber has with the service provider and suitable for making a transaction with the merchant, and

transmit, upon receiving use of the account number for the transaction, the unique reference to the service provider server, wherein the subscriber to which the account number belongs is identified by the service provider server in response to the transmitted unique reference, and the transaction is associated by the service

provider server to the registration ID of the identified subscriber so as to facilitate the transaction between the service provider and the merchant.

15. The server of claim 13, wherein the at least one memory and the computer program code are further configured to, with the at least one processor, cause the server network to generate the account number suitable for making the transaction with the merchant before the generation of the unique reference.

16. A system comprising a server network, a service provider server, and a merchant server for facilitating a transaction between a service provider corresponding to the service provider server and a merchant corresponding to the merchant server, wherein the server network comprises:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with the at least one processor, cause the server network at least to generate a unique reference that is used to map an account number generated to a subscriber registered with the service provider, the account number corresponding to a registration ID that the subscriber has with the service provider and suitable for making a transaction with the merchant; and transmit, upon receiving use of the account number for the transaction, the unique reference to the service provider server; and

wherein the service provider server comprises:

at least one processor; and

at least one memory including computer program code;

the at least one memory and the computer program code configured to, with the at least one processor, cause the service provider server at least to receive the unique reference; identify the subscriber to which the account number belongs in response to the received unique reference; associate the transaction to the registration ID of the identified subscriber so as to facilitate the transaction with the merchant.