

SYSTEMS AND METHODS FOR LOCATING MERCHANT TERMINALS BASED ON TRANSACTION DATA

CROSS-REFERENCE TO RELATED APPLICATIONS

5 This application claims priority to and the benefit of the filing date of U.S. Application Serial No. 14/862,704, filed September 23, 2015, which is hereby incorporated by reference in its entirety.

FIELD

10 The present disclosure generally relates to systems and methods for use in locating one or more merchant terminals based on transaction data, for example, for purchase transactions made at the terminals, and also based on location data associated with consumers making the transactions.

BACKGROUND

15 This section provides background information related to the present disclosure which is not necessarily prior art.

Merchants often offer products (*e.g.*, goods and services, etc.) for sale to consumers. The products may be purchased through a variety of means, including, for example payment accounts. As part of product purchases via payment accounts,
20 by consumers, data is transferred between different entities to authorize, settle and/or clear the transactions, *i.e.*, as transaction data. In connection therewith, the transaction data is often stored by one or more of the different entities, and subsequently used, for a variety of purposes, including marketing, etc.

25 SUMMARY

According to a first aspect of the present disclosure, there is provided a computer-implemented method for use in locating one or more merchant terminals, based on transaction data, the method comprising accessing, by a computing device, transaction data for at least one transaction between a merchant and at least one
30 consumer, the at least one transaction being at a merchant terminal and to a payment account associated with the at least one consumer, the transaction data, for each of the at least one transaction, including a payment account indicator, a terminal ID for the

merchant terminal, a merchant ID of the merchant, an acquirer ID for an acquirer associated with the merchant, and a temporal indicator; receiving, by the computing device, a location message from at least one portable communication device associated with the at least one consumer, the location message including location data
5 associated with the at least one transaction, the location data also including a location of the at least one portable communication device, the payment account indicator, and the temporal indicator; matching the transaction data to the location data based on the payment account indicator and the temporal indicator; identifying, by the computing device, a location associated with the location data as a location of the merchant
10 terminal; and assigning, by the computing device, a score to the identified location, the score including a mobility score indicative of a degree of mobility of the merchant terminal associated with the terminal ID.

According to a second aspect of the present disclosure, there is provided a non-transitory computer readable storage media including executable
15 instructions that, when executed by at least one processor, cause the at least one processor to: for each transaction by a consumer at a merchant terminal associated with a merchant: match transaction data for the transaction to location data for a portable communication device associated with the consumer in real time, or near real time, upon receipt of the location data, whereby the location data is identified to the
20 transaction, the transaction data including a terminal ID for the merchant terminal, a merchant ID of the merchant, an acquirer ID for an acquirer associated with the merchant, and a temporal indicator; and compile a terminal key number for the transaction based on the terminal ID, the merchant ID, and the inquirer ID; combine the location data identified to each transaction having the same terminal key number;
25 and assign a score to a location, included in the combined location data indicative of a confidence that the location is an actual location of the merchant terminal.

According to yet another aspect of the present disclosure, there is provided a system for use in locating one or more merchant terminals based on a combination of transaction data for transactions made by consumers at the merchant
30 terminals and location data for portable communication devices associated with the

consumers, the system comprising: a payment network configured to process multiple transactions between consumers and a merchant made at a merchant terminal associated with the merchant; and an engine comprising a processor coupled to the payment network, the processor configured, by executable instructions, to: access
5 transaction data from the payment network, the transaction data representative of the multiple transactions and, for each of the transactions, including a terminal ID for the merchant terminal, a merchant ID of the merchant, an acquirer ID for an acquirer associated with the merchant, and a temporal indicator; for each of the multiple transactions, access location data for a portable communication device associated with
10 the consumer making the transaction, the location data including at least one temporal indicator substantially similar to at least one of the temporal indicators of the transaction data; filter the accessed location data based on a known geography of an acquirer associated with the acquirer ID in the transaction data; identify a location based on matching the transaction data and the filtered location data; assign a score to
15 the identified location f, indicative of a confidence that the identified location is an actual location of the merchant terminal, the score based on a deviation of the location data for the multiple transactions; and provide the score to at least one issuer associated with one or more payment accounts, whereby the issuer is able to decline an authorization request for a transaction to the merchant based on the score.

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DRAWINGS

The drawings described herein are for illustrative purposes only of selected embodiments and not all possible implementations, and are not intended to limit the scope of the present disclosure.

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FIG. 1 is a block diagram of an exemplary system of the present disclosure suitable for use in locating merchant terminals based on transaction data for product purchases at the terminals;

CLAIMS

What is claimed is:

1. A computer-implemented method for use in locating one or more merchant terminals, based on transaction data, the method comprising:
 - 5 accessing, by a computing device, transaction data for at least one transaction between a merchant and at least one consumer, the at least one transaction being at a merchant terminal and to a payment account associated with the at least one consumer, the transaction data, for each of the at least one transaction, including a payment account indicator, a terminal ID for the merchant terminal, a merchant ID of the merchant, an acquirer ID for an acquirer associated with the merchant, and a
10 temporal indicator;
 - receiving, by the computing device, a location message from at least one portable communication device associated with the at least one consumer, the location message including location data associated with the at least one transaction,
15 the location data also including a location of the at least one portable communication device, the payment account indicator, and the temporal indicator;
 - matching the transaction data to the location data based on the payment account indicator and the temporal indicator;
 - identifying, by the computing device, a location associated with the
20 location data as a location of the merchant terminal; and
 - assigning, by the computing device, a score to the identified location, the score including a mobility score indicative of a degree of mobility of the merchant terminal associated with the terminal ID.
- 25 2. The computer-implemented method of claim 1, wherein the location of the at least one portable communication device associated with the at least one consumer includes the location of the at least one portable communication device within an interval of the at least one transaction.
- 30 3. The computer-implemented method of claim 1, wherein identifying the location associated with the transaction data as the location of the merchant terminal includes averaging the location data associated with multiple transactions at the merchant terminal including the at least one transaction, said identified location being the averaged location data; and

wherein assigning said score to the identified location includes assigning said score based on a total number of transactions included in the at least one transaction and a series of thresholds associated with the total number of transactions.

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4. The computer-implemented method of claim 4, further comprising filtering the location data based on a known geography of the acquirer associated with the merchant involved in the at least one transaction; and

wherein averaging the location data includes averaging the filtered location data.

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5. The computer-implemented method of claim 1, further comprising compiling a terminal key number for the merchant terminal based on the terminal ID; and

wherein assigning said score includes updating the score, based on one or more additional transactions associated with the terminal key number.

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6. The computer-implemented method of claim 1, wherein the assigned score further includes a location confidence score indicative of a confidence that the identified location is the actual location of the merchant terminal.

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7. The computer-implemented method of claim 1, wherein assigning said score includes updating the score, based on one or more additional transactions at said merchant terminal.

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8. The computer-implemented method of claim 1, further comprising disseminating the score to at least one issuer, whereby the score is usable by the issuer to detect fraud.

9. A non-transitory computer readable storage media including executable instructions that, when executed by at least one processor, cause the at least one processor to:

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for each transaction by a consumer at a merchant terminal associated with a merchant:

match transaction data for the transaction to location data for a portable communication device associated with the consumer in real time, or near real time, upon receipt of the location data, whereby the location data is identified to the transaction, the transaction data including a terminal ID for the merchant terminal, a merchant ID of the merchant, an acquirer ID for an acquirer associated with the merchant, and a temporal indicator; and
compile a terminal key number for the transaction based on the terminal ID, the merchant ID, and the acquirer ID;
combine the location data identified to each transaction having the same terminal key number; and
assign a score to a location, included in the combined location data indicative of a confidence that the location is an actual location of the merchant terminal.

10. The non-transitory computer readable storage media of claim 9, wherein, for each transaction, the location data identified to the transaction is included in a location message received from the portable communication device associated with the consumer performing the transaction, the location data including the location of the portable communication device and a temporal indicator; and
wherein, for each of transaction, the executable instructions, when executed by the at least one processor, cause the at least one processor to match the transaction data for the transaction to the location data identified to the transaction when the temporal indicator of the transaction data is within a predefined interval of the temporal indicator of the location data.

11. The non-transitory computer readable storage media of claim 9, wherein the executable instructions, when executed by the least one processor, further cause the at least one processor to provide the score to at least one issuer associated with one or more payment accounts, whereby the issuer is able to decline an authorization request for a transaction to the merchant and involving a payment account of a consumer when a portable communication device of the consumer is more than a deviation from said location and the score satisfies at least one threshold.

12. The non-transitory computer readable storage media of claim 9, wherein the executable instructions, when executed by the least one processor, further cause the at least one processor to filter at least one of the transaction, the transaction data, and the location data.

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13. The non-transitory computer readable storage media of claim 9, wherein the score further includes a mobility score indicative of a degree of mobility of the merchant terminal associated with the terminal ID.

10 14. A system for use in locating one or more merchant terminals based on a combination of transaction data for transactions made by consumers at the merchant terminals and location data for portable communication devices associated with the consumers, the system comprising:

a payment network configured to process multiple transactions
15 between consumers and a merchant made at a merchant terminal associated with the merchant; and

an engine comprising a processor coupled to the payment network, the processor configured, by executable instructions, to:

access transaction data from the payment network, the
20 transaction data representative of the multiple transactions and, for each of the transactions, including a terminal ID for the merchant terminal, a merchant ID of the merchant, an acquirer ID for an acquirer associated with the merchant, and a temporal indicator;

for each of the multiple transactions, access location data for a
25 portable communication device associated with the consumer making the transaction, the location data including at least one temporal indicator substantially similar to at least one of the temporal indicators of the transaction data;

filter the accessed location data based on a known geography of
30 an acquirer associated with the acquirer ID in the transaction data;

identify a location based on matching the transaction data and the filtered location data;

assign a score to the identified location, indicative of a confidence that the identified location is an actual location of the merchant

terminal, the score based on a deviation of the location data for the multiple transactions; and

provide the score to at least one issuer associated with one or more payment accounts, whereby the issuer is able to decline an authorization request for a transaction to the merchant based on the score.

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15. The computer-implemented method of claim 1, wherein assigning the score to the identified location includes assigning the score based on a deviation of the location data associated with the at least one transaction.

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16. The computer-implemented method of claim 16, wherein assigning the score to the identified location further includes assigning the score based on a weighting of the location data associated with the at least one transaction, the weighting based on a closeness in time of the location data to the at least one transaction.

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17. The non-transitory computer readable storage media of claim 9, wherein the executable instructions, when executed by the at least one processor, cause the at least one processor to, in connection with assigning the score to the location, assign the score to the location based on a deviation of the location data matched to the transaction data.

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18. The non-transitory computer readable storage media of claim 17, wherein the executable instructions, when executed by the least one processor, further cause the at least one processor to, in connection with assigning the score to the location, assign the score to the location based on a weighting of the location data matched to the transaction data, the weighting based on a closeness in time of the location data to the transaction.

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