METHOD FOR FACILITATING NATURAL DISASTER RELIEF PLANNING

FIELD OF INVENTION

[0001] The present invention relates broadly, but not exclusively, to methods for facilitating natural disaster relief planning.

BACKGROUND

[0002] In the event of natural disasters or calamities occurring in a particular area, an affected population typically moves to another area that is safer. Usually, there is a lack of accurate information regarding the movement and location of the affected population, and what percentage of the affected population moves to which region/city/locality. Hence, providing relief to the affected population may be difficult. Additionally, product sales in the relief area may increase, for example, in certain industries such as food and medical supplies. Merchants in the relief area may not have sufficient inventory to cater to the demands of the affected population.

[0003] A need therefore exists to provide methods for facilitating natural disaster relief planning that seek to address at least some of the above problems.

SUMMARY

[0004] According to a first aspect of the present disclosure, there is provided a computer-implemented method for facilitating natural disaster relief planning, comprising: obtaining current payment-card transaction data after a natural disaster occurs; identifying distinct merchants whom payment-card holders have made payment-card transactions with after the natural disaster occurred based on the current payment-card transaction data; obtaining a location of each of the distinct merchants by referring to a database having stored thereon the location of each of the distinct merchants; ranking each of the obtained locations based

on the current payment-card transaction data, wherein natural disaster relief is provided at the obtained locations based on their ranking; obtaining historical payment-card transaction data before the natural disaster occurred; identifying additional distinct merchants whom the payment-card holders have made payment-card transactions with before the natural disaster occurred based on the historical payment-card transaction data; obtaining a location of each of the additional distinct merchants by referring to the database further having stored thereon the location of each of the additional distinct merchants; and comparing the location of each of the distinct merchants with the location of each of the additional distinct merchants to provide an indication of movement of the payment-card holders due to the natural disaster.

[0005] In an example, each of the obtained locations may be ranked based on a count of the number of distinct payment-card holders whom have made payment-card transactions with each of the distinct merchants at each of the obtained locations.

[0006] In an example, the method may further comprise: assigning each of the obtained locations to one of a plurality of sectors, each sector defining a geographical locality; and ranking each of the plurality of sectors based on the count of the number of distinct payment-card holders whom have made payment-card transactions with each of the distinct merchants at each of the obtained locations assigned to the sector.

[0007] In an example, each of the obtained locations may be ranked based on a count of the number of payment-card transactions that have been made with each of the distinct merchants at each of the obtained locations.

[0008] In an example, the method may further comprise: assigning each of the obtained locations to one of a plurality of sectors, each sector defining a geographical locality; and ranking each of the plurality of sectors based on the count of the number of payment-card transactions that have been made with each of the distinct merchants at each of the obtained locations assigned to the sector.

[0009] In an example, the method may further comprise: obtaining an industry-type of each of the distinct merchants by referring to the database further

having stored thereon the industry-type of each of the distinct merchants, wherein the obtained industry-type of each of the distinct merchants provide an indication of industries involved in payment-card transactions after the natural disaster occurred.

[0010] As mentioned in the first aspect, the method further comprises: obtaining historical payment-card transaction data before the natural disaster occurred; identifying additional distinct merchants whom the payment-card holders have made payment-card transactions with before the natural disaster occurred based on the historical payment-card transaction data; obtaining a location of each of the

additional distinct merchants by referring to the database further having stored thereon the location of each of the additional distinct merchants; and comparing the location of each of the distinct merchants with the location of each of the additional distinct merchants to provide an indication of movement of the payment-card holders due to the natural disaster.

[0011] In an example, each of the obtained locations may comprise geographical location data corresponding to the distinct merchant's premises. The geographical location data may comprise one or more of: (i) a latitude and longitude, and (ii) postal address.

[0012] In an example, the current payment-card transaction data may comprise a merchant identity for uniquely identifying each of the distinct merchants.

[0013] In an example, the method may further comprise storing, in the database, the merchant identity in association with the corresponding location of the distinct merchant.

[0014] According to a second aspect of the present disclosure, there is provided an apparatus for facilitating natural disaster relief planning, the apparatus 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 at least one processor, cause the apparatus at least to: obtain current payment-card transaction data after a natural disaster occurs; identify distinct merchants whom payment-card holders have made payment-card transactions with after the natural disaster occurred based on the current payment-card transaction data; obtain a location of each of the distinct merchants by referring to a database having stored thereon the location of each of the distinct merchants; rank each of the obtained locations based on the current payment-card transaction data, wherein natural disaster relief is provided at the obtained locations based on their ranking; obtain historical payment-card transaction data before the natural disaster occurred; identify additional distinct merchants whom the payment-card holders have made payment-card transactions with before the natural disaster occurred based on the historical payment-card transaction data; obtain a

location of each of the additional distinct merchants by referring to the database further having stored thereon the location of each of the additional distinct merchants; and compare the location of each of the distinct merchants with the location of each of the additional distinct merchants to provide an indication of movement of the payment-card holders due to the natural disaster.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] Embodiments of the invention 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:

CLAIMS

1. A computer-implemented method for facilitating natural disaster relief planning, comprising:

obtaining current payment-card transaction data after a natural disaster occurs;

identifying distinct merchants whom payment-card holders have made payment-card transactions with after the natural disaster occurred based on the current payment-card transaction data;

obtaining a location of each of the distinct merchants by referring to a database having stored thereon the location of each of the distinct merchants;

ranking each of the obtained locations based on the current payment-card transaction data, wherein natural disaster relief is provided at the obtained locations based on their ranking;

obtaining historical payment-card transaction data before the natural disaster occurred;

identifying additional distinct merchants whom the payment-card holders have made payment-card transactions with before the natural disaster occurred based on the historical payment-card transaction data;

obtaining a location of each of the additional distinct merchants by referring to the database further having stored thereon the location of each of the additional distinct merchants; and

comparing the location of each of the distinct merchants with the location of each of the additional distinct merchants to provide an indication of movement of the payment-card holders due to the natural disaster.

2. The method as claimed in claim 1, wherein each of the obtained locations is ranked based on a count of the number of distinct payment-card holders who have made payment-card transactions with each of the distinct merchants at each of the obtained locations.

3. The method as claimed in claim 2, further comprising:

assigning each of the obtained locations to one of a plurality of sectors, each sector defining a geographical locality; and

ranking each of the plurality of sectors based on the count of the number of distinct payment-card holders who have made payment-card transactions with

each of the distinct merchants at each of the obtained locations assigned to the sector.

4. The method as claimed in claim 1, wherein each of the obtained locations is ranked based on a count of the number of payment-card transactions that have been made with each of the distinct merchants at each of the obtained locations.

5. The method as claimed in claim 4, further comprising:

assigning each of the obtained locations to one of a plurality of sectors, each sector defining a geographical locality; and

ranking each of the plurality of sectors based on the count of the number of payment-card transactions that have been made with each of the distinct merchants at each of the obtained locations assigned to the sector.

6. The method as claimed in any one of the preceding claims, further comprising obtaining an industry-type of each of the distinct merchants by referring to the database further having stored thereon the industry-type of each of the distinct merchants, wherein the obtained industry-type of each of the distinct merchants provide an indication of industries involved in payment-card transactions after the natural disaster occurred.

7. The method as claimed in any one of the preceding claims, wherein each of the obtained locations comprise geographical location data corresponding to the distinct merchant's premises.

8. The method as claimed in claim 7, wherein the geographical location data comprises one or more of: (i) a latitude and longitude, and (ii) postal address.

9. The method as claimed in any one of the preceding claims, wherein the current payment-card transaction data comprises a merchant identity for uniquely identifying each of the distinct merchants.

10. The method as claimed in claim 9, further comprising storing, in the database, the merchant identity in association with the corresponding location of the distinct merchant.

11. An apparatus for facilitating natural disaster relief planning, the apparatus 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 at least one processor, cause the apparatus at least to:

obtain current payment-card transaction data after a natural disaster occurs;

identify distinct merchants whom payment-card holders have made payment-card transactions with after the natural disaster occurred based on the current payment-card transaction data;

obtain a location of each of the distinct merchants by referring to a database having stored thereon the location of each of the distinct merchants;

rank each of the obtained locations based on the current payment-card transaction data, wherein natural disaster relief is provided at the obtained locations based on their ranking;

obtain historical payment-card transaction data before the natural disaster occurred;

identify additional distinct merchants whom the payment-card holders have made payment-card transactions with before the natural disaster occurred based on the historical payment-card transaction data;

obtain a location of each of the additional distinct merchants by referring to the database further having stored thereon the location of each of the additional distinct merchants; and

compare the location of each of the distinct merchants with the location of each of the additional distinct merchants to provide an indication of movement of the payment-card holders due to the natural disaster.