

WHAT IS CLAIMED IS:

1. A method of providing responses to a natural language query,
comprising:
receiving a natural language query from a merchant, the merchant being associated
5 with a merchant identifier;
processing the natural language query to derive at least one intent and at least
one entity;
retrieving a plurality of transaction data entries, each transaction data entry
including transaction data associated with a payment transaction having the merchant
10 identifier associated with the merchant;
identifying a set of the plurality of transaction data entries that correspond to
the at least one derived intent or the at least one entity;
calculating a response to the natural language query based on the set of the
plurality of transaction data entries using at least one analytical model;
15 generating a natural language response, based on the calculated response, to
the natural language query; and
transmitting the generated natural language response.
2. The method of claim 1, further comprising:
20 retrieving a plurality of external information associated with the at least
derived one intent or the at least one entity from at least one external data source; and
identifying a set of the plurality of external information that correspond to the
at least one derived intent or the at least one entity;
wherein the calculated response is further based on the set of the plurality of external
25 information.
3. The method of claim 1, wherein the at least one derived intent includes
a scheduled task for monitoring the plurality of transaction data entries, the scheduled
task having at least one triggering threshold;
30 wherein the identified set of the plurality of transaction data entries is updated
based on the triggering threshold; and
wherein the calculated response is updated based on the triggering threshold
and the updated identified set of the plurality of transactions.

4. The method of claim 1, wherein the derived intent is a request for explaining the generated natural language response; and transmitting the at least one analytical model.
5. The method of claim 1, further comprising retrieving another plurality of transaction data entries, each transaction data entry including transaction data associated with a payment transaction not having the merchant identifier associated with the merchant.
6. The method of claim 5, wherein the calculated response is further based on the another plurality of external information, the calculated response removing identifying information from the another plurality of external information.
7. The method of claim 2, where the at least one data source includes merchant accounting software executing on a merchant server.
8. The method of claim 1, wherein the at least one derived intent includes one of a performance metric, a comparison metric, a timeframe, and a target user.
9. The method of claim 1, further comprising:
identifying a prediction of future performance related to the at least one derived intent, wherein
the natural language response includes the prediction of future performance.
10. The method of claim 9, wherein the prediction of future performance is identified by an artificial intelligence.
11. A system providing responses to a natural language query, comprising:
a computing device configured to input into an interface a natural language query created by a merchant; and
a processing server comprising:
a receiving device configured to receive the natural language query being input into the computing device being used by the merchant, the merchant being associated with a merchant identifier;

a natural language processor configured to derive at least one intent and at least one entity;

a querying module configured to retrieve a plurality of transaction data entries, each transaction data entry including transaction data associated with a payment transaction having the merchant identifier associated with the merchant;

the querying module being further configured to identify a set of the plurality of transaction data entries that correspond to the at least one derived intent or the at least one entity;

a calculation module configured to calculate a response to the natural language query based on the set of the plurality of transaction data entries using at least one analytical model;

a natural language response module configured to generate a natural language response, based on the calculated response, to the natural language query; and

a transmitting device configured to transmit the generated natural language response.

12. The system of claim 11, wherein the querying module is further configured to:

retrieve a plurality of external information associated with the at least derived one intent or the at least one entity from at least one external data source;

identify a set of the plurality of external information that correspond to the at least one derived intent or the at least one entity; and

wherein the calculation module is further configured to calculate the response based on the set of the plurality of external information.

13. The system of claim 11, wherein the natural language processor derived intent includes a scheduled task for monitoring the plurality of transaction data entries, the scheduled task having at least one triggering threshold;

wherein the querying module updates the identified set of the plurality of transaction data entries based on the triggering threshold; and

wherein the calculation module updates the calculated response based on the triggering threshold and the updated identified set of the plurality of transactions.

14. The system of claim 11, wherein the receiving device receives a request from the computing device of the merchant to explain the generated natural language response;

wherein the natural language processor determines the derived intent is a
5 request for explaining the generated natural language response; and

wherein the transmitting device transmits the at least one analytical model used by the calculation module to generate the response on which the generated natural language response is based.

10 15. The system of claim 11, wherein the querying module is further configured to retrieve another plurality of transaction data entries, each transaction data entry including transaction data associated with a payment transaction not having the merchant identifier associated with the merchant; and

wherein the calculation module calculated response is further based on the
15 another plurality of external information.

16. The system of claim 15, wherein the querying module is further configured to remove identifying information from the another plurality of transaction data entries.

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17. The system of claim 12, where the at least one data source includes merchant accounting software executing on a merchant server.

18. The system of claim 11, wherein the at least one derived intent
25 includes one of a performance metric, a comparison metric, a timeframe, and a target user.

19. The system of claim 11, further comprising:
a predictive module configured to identify a prediction of future performance
30 related to the at least one derived intent, wherein
the natural language response includes the prediction of future performance.

20. The system of claim 19, wherein the prediction of future performance is identified by an artificial intelligence.

21. A method for providing a proactive alert as a natural language message, comprising:
- storing, in a transaction database of a processing server, a plurality of transaction data entries, each transaction data entry being related to a payment
 - 5 transaction involving a merchant and including transaction data;
 - storing, in a memory of the processing server, a plurality of metrics, wherein each of the plurality of metrics is related to at least one of: merchant performance and market demographics for at least one of: the merchant, a geographic area including the merchant, a related merchant, and a market industry related to the merchant;
 - 10 identifying, by a calculation module of the processing server, a present metric for the merchant based on at least the transaction data included in one or more transaction data entries stored in the transaction database, wherein the present metric is related to merchant performance or market demographics for the merchant and is different from one of the plurality of metrics stored in the memory by at least
 - 15 predetermined threshold;
 - generating, by a natural language response module of the processing server, a natural language response including at least the identified present metric and a difference between the identified present metric and the one of the plurality of metrics; and
 - 20 electronically transmitting, by a transmitting device of the processing server, the generated natural language response to a computing system associated with the merchant.
22. A system for providing a proactive alert as a natural language message,
- 25 comprising:
- a transaction database of a processing server configured to store a plurality of transaction data entries, each transaction data entry being related to a payment transaction involving a merchant and including transaction data;
 - a memory of the processing server configured to store a plurality of metrics,
 - 30 wherein each of the plurality of metrics is related to at least one of: merchant performance and market demographics for at least one of: the merchant, a geographic area including the merchant, a related merchant, and a market industry related to the merchant;

a calculation module of the processing server configured to identify a present metric for the merchant based on at least the transaction data included in one or more transaction data entries stored in the transaction database, wherein the present metric is related to merchant performance or market demographics for the merchant and is
5 different from one of the plurality of metrics stored in the memory by at least predetermined threshold;

a natural language response module of the processing server configured to generate a natural language response including at least the identified present metric and a difference between the identified present metric and the one of the plurality of
10 metrics; and

a transmitting device of the processing server configured to electronically transmit the generated natural language response to a computing system associated with the merchant.