

CLAIMS

1. A data warehouse system comprising:

one or more processors; and

a memory coupled to the one or more processors, the memory storing first data comprising a first database of query log records and instructions that, when executed by the one or more processors, cause the system to:

receive a plurality of search queries, each search query received at a reception time, and defining a departure time and an origin-destination pair; and

for each search query:

determine a time until departure from the reception time to the departure time of the search query, and

store, in a query log record associated with the origin-destination pair, second data indicating reception of the search query and the time to departure, wherein each query log record indicates a number of spaces and the time to departure associated with each space for the origin-destination pair with which the query log record is associated; and

in response to receiving a request to provide statistical data for a respective origin-destination pair for a period of time:

retrieve one or more query log records from the first database, each of the one or more query log records being associated with the respective origin-destination pair and including data relating to search queries that define a respective departure time which falls within the period of time;

extract the second data from each of the retrieved query log records;

generate a first pickup curve depicting an intensity of search queries for the respective origin-destination pair with respect to the time to departure during the period of time based on the second data, wherein the system tracks and provides data indicating reception of the search query and the time to departure; and

forecast a demand for spaces for the respective origin-destination pair using the first pickup curve, wherein forecasting uses historical search query data to predict future demand rather than historical booking data alone.

2. The system of claim 1 wherein the instructions further cause the system to:
define an index including a plurality of fields each corresponding to a respective origin-destination pair, each field defining a location in the first database of each query log record that is associated with the respective origin-destination pair.
3. The system of claim 1 or 2 wherein the search queries are low fare search queries.
4. The system of claim 1 wherein the departure time defined by each of the one or more query log records has passed at the time the request is received.
5. The system of claim 1 or 4 wherein the period of time covers a plurality of departure intervals, and the instructions cause the system to forecast the demand for spaces for the respective origin-destination pair using the first pickup curve by:
querying a second database for third data that defines a plurality of bookings of spaces for the respective origin-destination pair that have departed during the period of time;
generating a second pickup curve using the third data, the second pickup curve depicting a number of bookings with respect to the time to departure during the period of time; and
generating a third pickup curve that is a weighted average of the first pickup curve and the second pickup curve,
wherein the demand for spaces is forecast for the respective origin-destination pair using the third pickup curve.
6. The system of claim 5 wherein the instructions further cause the system to, for at least one departure interval covered by the period of time:
determine a fourth pickup curve for the respective origin-destination pair;
determine a weighting factor that provides a best fit between the third pickup curve and the fourth pickup curve; and

forecast the demand for spaces for the respective origin-destination pair for a future departure interval using the third pickup curve with the weighting that provides the best fit, wherein the fourth pickup curve is a target pickup curve.

7. The system of claim 6 wherein the instructions further cause the system to, for each future departure interval:

determine a partial pickup curve for the search queries that were satisfied by a respective travel solution for the respective origin-destination pair that is scheduled to depart during the future departure interval;

determine the third pickup curve having the best fit to the partial pickup curve; and

forecast the demand for spaces for the respective origin-destination pair for the future departure interval using the third pickup curve having the best fit to the partial pickup curve.

8. The system of claim 7 wherein each departure interval covers a day, and the period of time covers a year.

9. The system of any one of claims 5 to 8 wherein the respective origin-destination pair is one of a plurality of origin-destination pairs comprising a travel network, and the instructions further cause the system to:

generate a separate first pickup curve for each departure interval for each origin-destination pair of the plurality of origin-destination pairs.

10. A method of managing a data warehouse system, the method comprising:

receiving a plurality of search queries by the data warehouse system, each search query received at a reception time, and defining a departure time and an origin-destination pair; and

for each search query:

determining a time until departure from the reception time to the departure time of the search query, and

storing, in a query log record associated with the origin-destination pair, second data indicating reception of the search query and the time to departure, wherein each query log record is stored in a first database, and indicates a number of spaces and the

time to departure associated with each space for the origin-destination pair with which the query log record is associated; and

in response to receiving a request to provide statistical data for a respective origin-destination pair for a period of time:

retrieving one or more query log records from the first database, each of the one or more query log records being associated with the respective origin-destination pair and including data relating to search queries that define a respective departure time which falls within the period of time;

extracting the second data from each of the retrieved query log records;
generating a first pickup curve depicting an intensity of search queries for the respective origin-destination pair with respect to the time to departure during the period of time based on the second data, wherein the method tracks and provides data indicating reception of the search query and the time to departure; and

forecasting a demand for spaces for the respective origin-destination pair using the first pickup curve, wherein forecasting uses historical search query data to predict future demand rather than historical booking data alone.

11. The method of claim 10 wherein the period of time covers a plurality of departure intervals, and forecasting the demand for spaces for the respective origin-destination pair using the first pickup curve comprises:

querying a second database for third data that defines a plurality of bookings of spaces for the respective origin-destination pair that have departed during the period of time;

generating a second pickup curve using the third data, the second pickup curve depicting a number of bookings with respect to the time to departure during the period of time; and

generating a third pickup curve that is a weighted average of the first pickup curve and the second pickup curve,

wherein the demand for spaces is forecast for the respective origin-destination pair using the third pickup curve.

12. The method of claim 11 further comprising, for at least one departure interval covered by the period of time:

determining a fourth pickup curve for the respective origin-destination pair;
determining a weighting factor that provides a best fit between the third pickup curve and the fourth pickup curve; and
forecasting the demand for spaces for the respective origin-destination pair for a future departure interval using the third pickup curve with the weighting that provides the best fit, wherein the fourth pickup curve is a target pickup curve.

13. A computer program comprising program code for the execution of the method according to any one of claims 10 to 12 when the program is carried out on a computer or computer system.