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Case Study 2

1.)

Continental Airlines uses active data warehousing with real-time (collected at regular, short intervals) business intelligence concerning a broad range of customer and flight activity. Data is collected from Continental Airlines main operational systems and transferred to the enterprise data warehouse in real-time, using event-based automatic queues in many cases (customer transactions, flight operations, fraud detection). Initially, "Continental could not track a customer's itinerary from origin to destination when it involved more than one stop because itinerary data were held in multiple databases" (Book 285). Implementing the data warehouse, data from various sources (customers, flights, revenue) are combined to inform high-level management decisions and optimize operations. Realizing the potential of data warehousing capabilities, Continental Airlines chose to invest further in the collection of real-time data and BI applications using an active data warehouse. Continental seems to apply active data warehousing in the way it is usually described overall.

2.)

Real-time data warehousing fits with Continental Airlines strategy to be not just the most efficient, reliable airline choice, but also the customer's favorite airline choice. Continental's implementation of real-time data warehousing applications were able to "provide real-time, actionable information to support tactical decision-making and business processes" (Book 285). With the ability to react and adjust to new events as soon as they happen, a variety of applications became possible for the airline company to not only optimize operations and reduce costs, but enhance the overall quality of customer experience and increase customer retention, fitting in with the "first to favorite" plan.

3.)

After the implementation of real-time data warehousing at Continental Airlines, a variety of new BI applications and services became available to the customers and managers alike. Demand driven dispatch services enable the real-time assignment of planes based on size to flights with suitable demand (large planes for lots of passengers). Continental's warehouse sometimes serves as an emergency backup system for airline reservations because it includes real-time reservation data. Using real-time collected transaction data, customers can be ranked by overall profitability based on their "frequency, recency, and monetary value" (Book 286). Flight operations also benefit from a variety of customized real-time applications developed by Continental airlines. A set of interactive graphical displays known as the Flight Management Dashboard helps the operations staff to solve issues (such as timing of arrivals and departures) in the flight network and improve airline profitability. Thanks to real-time flight statistics, Continental can see, at any time, revenue projections for any flight, including delays, cancelations, and where the most valuable customer is on the flight. In the wake of 9/11, Continental also began placing efforts into monitoring the authenticity of passenger reservations and flight manifests in real-time. A "prowler application" was developed in order to detect fraudulent activity as it occurs.

4.)

The data-warehousing environment at Continental is built on an "8-terrabyte enterprise data warehouse running on a 3 GHz, 10-node Teradata 5380 machine" (Book 289). The warehouse collects data from a wide range of sources including the mainframe reservation system and satellite feeds from airplanes. The data is often unorganized initially, until a passenger name record PNR server application converts and organizes the information in memory to include the origin and destination information. The PNR server application then sends the data in a new format to the data warehouse.

5.)