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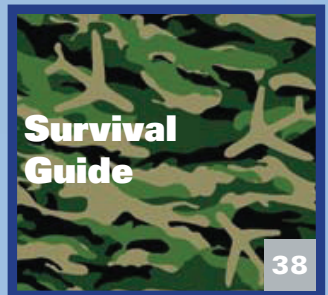
Taking your airline to new heights

A Clear Vision

A Conversation With ...
Sean Durfy, Chief Executive
Officer, WestJet Airlines,
Page 16.



Special Section



8 Japan Airlines takes steps to improve its environmental performance

21 Delta Air Lines/Northwest Airlines merger impacts regional carriers

44 Airlines have three basic options to raise capital

Immense Intelligence

Business intelligence capabilities enable companies to determine a successful course, effectively respond to change and measure their success based on a mix of current and historic data.

■ Michael Embry | *Ascend* Contributor





Enterprise business intelligence shows what's going on in your business and helps plan business strategy, react to changes and monitor success. During the course of business, you can only know what direction and how fast you're going in relation to where you are and where you've been. That is a fundamental concept behind the use of business intelligence systems, which can be extremely beneficial to airlines that utilize them from providers specifically designed for the air transport industry (see related article on page 70). Even though BI incorporates a lot of technology, the business view of BI is most critical because if you don't know what's going on in your business, you may be going out of business.

As with any type of industry, business intelligence systems can be effectively applied to the travel and airline businesses. BI systems can help in many areas including cost control, revenue enhancement, customer engagement/satisfaction and marketing effectiveness. While transaction systems (online transaction processing) are needed to perform business functions and capture data from those transactions, BI is required to understand the context of the transactions and the effectiveness of business decisions as well as to provide insight into planning for the future.

So what exactly is business intelligence? According to Forrester Research, Inc., BI is a set of methodologies, processes, architectures and technologies that transform raw data into meaningful and useful information. And Gartner, Inc., breaks it down even further by separating BI into information delivery and analysis. Information delivery includes reporting, dashboards, ad hoc query and Microsoft Office automation. Analysis covers online analytical processing, advanced visualization, predictive analytics, data mining and scorecarding.

This list is indicative of the different aspects of BI. There are two primary categories: reporting and analysis. Traditional BI tools have been used for reporting, which usually identifies what has happened in the past. For example, it is important to know how many passengers there were yesterday, last week and last month as well as how much revenue was generated. This can be expanded to compare the number of passengers last month versus the same month the previous year. This type of reporting then generates further questions such as:

- Why would the number of passengers change last month versus the same month last year?
- What were the frequent flyer demographics of the passengers?
- What were the advanced-purchase characteristics?

- Do those demographics and characteristics differ based on the origin-and-destination cities?

As these questions continue to arise, more in-depth analysis of the data is required, which leads to more data to analyze as well as different ways to analyze and view the information generated.

How Does It Work?

Capturing data is the first key to an effective business intelligence solution. The transaction systems used to run the business (shopping, point of sale, passenger check-in, etc.) provide data sources for BI systems. Data is usually collected in a data warehouse system using extract/transform/load, or ETL, processes. The transformations are used to apply business rules to make the data more understandable from a business rather than technical perspective. It is important that these data warehouse systems are on separate database infrastructures from the online transaction processing systems because of the different tuning, processing and data retention requirements. Using an enterprise data warehouse method (where all required data is collected in one system) provides the data management features required to provide "one version of the truth" for reporting and analysis. A representative list of DW vendors includes Oracle, IBM-DB2, Microsoft-SQL Server and Teradata. A new and interesting entrant into this DW space is data warehouse appliances, which includes Netezza, Greenplum Network, Microsoft-DATALlegro, Oracle and Teradata.

Business Intelligence Tools

The most commonly used data reporting tool is Microsoft Excel, but since Excel is an independent desktop tool, it presents many deployment challenges, most of which can be overcome by using business intelligence tools specifically developed for data reporting and analysis. The BI tools (for example, SAP-Business Objects, IBM-Cognos, MicroStrategy, etc.), in conjunction with the DW system, can be architected to provide development, test and production environments where processes can be implemented to ensure information quality (completeness, consistency, accuracy and timeliness).

As can be surmised from Gartner's classification of information delivery and analysis, more than one BI solution may be required to accommodate every business need. Even though one enterprise tool may be a goal, in many cases, this goal cannot be achieved because of previous purchase decisions, business unit independence, cost restrictions or tool capabilities.

As a BI application expands to include many aspects of reporting, analysis, dashboards, data visualization, etc., one vendor's BI tools may not provide the "best in class" for all aspects of the requirements. However, trying to integrate and manage different tools from multiple vendors may be more than some companies are willing to attempt.

Two other options that exist for BI application development include newer open-source tools (such as JasperSoft and Pentaho) and programmatic development (using Java, Visual Studio or other programming languages). Both of these alternatives to using traditional BI tool suites may require developers with different skill levels and different support requirements for managing the BI products.

The Future Of BI

While many businesses are at the early stages of adoption of traditional BI capabilities, others have begun to deploy more advanced methods as the BI industry and business requirements continue to develop. To understand your business, it is important to be able to report on what happened in the past and analyze why these things happened. BI reporting and analysis tools can provide these capabilities. However, being able to make reliable predictions of what will happen under certain business conditions and being able to influence the outcome of business/customer interaction is also an important capability that can be provided by certain BI processes such as data mining and predictive analytics.

New areas of investigation include operational BI and business performance management. Operational BI uses traditional BI methods, concepts and tools to report and analyze near real-time data. This, of course, requires access to real-time data feeds that can require different data source and ETL methods. Business performance management is considered a next-generation BI solution that integrates a broader scope of a company's data, including sales transactions, human resource information, financial data and any other relevant business data.

The overriding point to consider for investment in business intelligence development is that BI processes are an integral part of business management, process improvement and business success. ■

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