Chapter 14
The BI-Based Organization

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ABSTRACT

Business intelligence (BI) is an umbrella term that is commonly used to describe the technologies, applications, and processes for gathering, storing, accessing, and analyzing data to help users make better decisions. For BI-based firms, BI is a prerequisite for competing in the marketplace. Though there are several possible BI targets, it is important to understand how they differ in terms of strategic vision, level of sponsorship, required resources, impact on people and processes, and benefits. Some companies like Harrah's Entertainment, Continental Airlines, Norfolk Southern, and Blue Cross and Blue Shield of North Carolina are exemplars of BI best practices. Despite the progress made with BI, there are still many opportunities for academic research.

INTRODUCTION

The inaugural issue of the *International Journal of Business Intelligence Research* provides an excellent opportunity to reflect on the history and future of BI, as well as the remarkable and unprecedented transformations it can effect. BI has a rich history with origins that date back fifty years ago. As we journey ahead in BI, we must acknowledge from where we have come and what we currently understand. Only then can we further the field in effective ways.

Organizations first used computers in the 1960s for transaction processing and scientific applications. At the time, organizations did not focus on decision support, although they did create reports that summarized the transaction data that was processed. By the late 1960s, the first decision support applications emerged to help managers better plan and optimize specific business goals and activities, such as production planning and investment portfolio optimization (Power, 2007). The term *decision support systems,* or *DSS,* was used to describe these analytic applications, and later became the name associated with an academic field.

Over the years, a variety of additional decision support applications emerged, including executive information systems, expert systems, and online analytical processing, each with specific differentiating characteristics and unique names. In the early 1990s, Howard Dresner, a Gartner analyst, coined the expression *business intelligence* to describe these applications; since then the term has come to be widely used in industry, and to a slightly lesser extent in academia, as an umbrella term for all decision support applications (Gartner, 2009b). In recent years, *analytics* also has been used to describe applications that provide decision support (Davenport, 2006).

Just as the terminology for BI has evolved, so has BI's role and impact on organizations. BI has moved from being a contributor to organizational success to being a prerequisite for it; indeed, for many firms, BI is a prerequisite for even competing in the marketplace. We call these firms *BI-based organizations* because of the critical role that BI plays. BI also has changed from being a tool used by a few specialists to one that is used by many workers. It has changed from focusing solely on the analysis of historical data to including the capture and use of real-time data to impact current, operational decisions. Consequently, it is not surprising that Gartner found in both 2008 and 2009 that BI was at the top of many CIOs' strategic agendas (Gartner 2008, 2009a).

For several decades we have been studying what leading companies have been doing with BI. We have identified best practices by judging The Data Warehousing Institute's Best Practices Awards competitions and by developing case studies about BI and data warehousing vendors' top customers (e.g., Anderson-Lehman, Watson, Wixom, & Hoffer, 2004; Cooper, Watson, Wixom, & Goodhue, 2000). Here we share findings which are not only interesting and significant, but which demonstrate the transformative - and sometimes unanticipated - power of BI. In particular, we describe practices at Harrah's Entertainment, Continental Airlines, Norfolk Southern, and Blue Cross and Blue Shield of North Carolina. Prior to discussing each company, we provide a conceptual foundation for interpreting the work that was done. Later we discuss a BI maturity model that helps explicate how organizations' BI capabilities evolve over time. In closing, we provide suggestions for future academic BI research. We begin, however, with a definition of BI and a description of a generic best practice BI environment.

A BI DEFINITION

There is no universally-accepted definition of BI, but the following is useful for our purposes:

Business intelligence (BI) is a broad category of technologies, applications, and processes for gathering, storing, accessing, and analyzing data to help its users make better decisions.

Several aspects of this definition warrant discussion. While BI sometimes is thought of in terms of applications, such as dashboards/scorecards or predictive analytics, we consider BI to be broader in scope. For us, it includes gathering data from source systems, storing the data, and accessing and analyzing the data using BI technologies and applications. Putting it differently, BI includes both *getting data in* (to a data mart or warehouse[1]) and *getting data out* (through technologies or applications that meet some kind of business purpose).

Much like Sprague's (1980) distinction between DSS applications and DSS generators, BI includes both BI applications and BI technologies, which can be used to develop the applications. For example, a company may have dashboards for call center operators, but these dashboards are built using a specific technology, such as MicroStrategy Report Services. Similarly, a financial analyst may have a financial planning application built using Microsoft Excel that accesses warehouse data.

Processes are also a very important part of BI. For example, there have to be processes for

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