

Using Business Analytics for Strategic Alignment and Organisational Transformation

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ABSTRACT

Organisations use business analytics (BA) systems to create value and provide competitive advantage. They frequently use BA systems to respond quickly to market changes and customer demand, and for market differentiation with better customer service and new types of products and services. The authors argue that BA systems can also enable alignment between business strategy and information technology (IT) strategy and support organisational transformation. The authors use a single case study to explain how a global data warehouse, standardized metrics and sophisticated reporting capabilities supported the strategic transformation of a diversified and multi-layered international mining company into a unified and integrated global organisation. They identify a number of core technology, management, culture, governance and people related capabilities that were crucial to the success of the global transformation initiative. Two important implications of the case study are the importance of BA systems in the alignment of IT and business strategy and the synergistic interaction of BA systems and other organizational resources in achieving benefits.

Keywords: Business Analytics (BA), Case Study, Core Capabilities, Data Warehousing, Strategic Alignment

INTRODUCTION

Increasing business pressure to accommodate customer needs and respond quickly to market changes has led many organisations to re-evaluate their business strategies and adopt business analytics (BA) systems as a means to improve organisational processes and decision-making (Davenport & Harris, 2007). There is considerable interest in understanding how

BA systems provide value and competitive advantage to organisations (Davenport & Harris, 2007; Davenport, Harris, & Morison, 2010). BA systems involve the structuring, storage and use of large amounts of high quality data, typically in a data warehouse. Decision-makers use comprehensive reporting, dash-boarding and online analytical processing (OLAP) technologies to improve and enhance their decision-making capabilities. BA systems also involve the use

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of more advanced techniques such as statistical and quantitative analysis, and explanatory and predictive modeling. In this study, we focus on the former functions of BA systems.

BA systems provide benefits to organizations by enabling improvements to business processes, firm performance and creating competitive advantage (Davenport & Harris, 2007). A number of empirical studies have discussed the use of BA systems and reported positive outcomes in various industries (Bala, 2012; Carte, Schwarzkopf, Shaft, & Zmud, 2005; Kohavi, Rothleder, & Simoudis, 2002; Kohli, 2007; Piccoli & Watson, 2008). However, most of these studies focus on specific applications of BA within particular business areas rather than on enterprise-wide and global reporting. In this study, we explore how BA systems can enable strategic alignment between business and information technology (IT) strategy and support organisational transformation.

Research on this topic is important for three reasons. First, BA systems have become an important strategic investment for many firms (Davenport et al., 2010). Organisations are investing large amounts of money in BA systems (Gartner, 2010). The software market for BA technology grew by 16.4% to \$12.2 billion in 2012 (Gartner, 2012). Furthermore, BA systems were recently rated the number one technology priority by IT executives (Gartner, 2012; IBM, 2011). Second, although much is known about how enterprise resource planning systems bring benefits to organisations (Gattiker & Goodhue, 2005; Seddon, Calvert, & Yang, 2010), this does not generalize to BA systems with their strong emphasis on data management and decision support. Third, despite considerable research in the area of the strategic alignment of business and IT in general (Hinssen, 2010), there is little research on the effect of global data warehousing and reporting BA systems on organisational transformation to support business strategy.

The paper is organized as follows. First, we discuss relevant background literature on BA, the strategic alignment of business and IT, and enterprise architecture operating models. Next, we discuss the case study research ap-

proach selected for this study. Following that, we present the case study and describe how BA systems were used to enable strategic alignment and support organisational transformation in an international mining company. Then we identify a number of core capabilities critical to the success of the BA initiative. Finally, we conclude the paper with some implications of the work and suggestions for future research.

BACKGROUND

Three key areas of the literature are reviewed in this section. First, we discuss previous work that explains how BA systems provide value to organisations. Second, we discuss alignment between business strategy and IT strategy. Third, we discuss how strategy can be conceptualized as enterprise architecture, and explain four different types of operating model.

BA Systems and Benefits

Managers and other decision-makers use BA systems to interpret organisational data to improve decision-making and optimise business processes (Negash, 2004; Watson & Wixom, 2007a). The use of data to support decision-making is consistent with management theorists who argue for the use of evidence-based (or fact-based) management in business (Davenport & Harris, 2007; Pfeffer & Sutton, 2006). The BA technologies used by organisations include data warehouses and data marts, executive dashboards and scorecards, on-line analytical processing, data visualization, data mining and other advanced uses (e.g. predictive modeling). The technologies have matured over the last decade from the early attempts to plan and implement data warehouses to enhanced data quality and optimization solutions, and their use is now widespread in business (Ramamurthy, Sen, & Sinha, 2008; Watson & Wixom, 2007a).

A number of research studies report benefits from the use of BA systems in a variety of industry sectors and in different functional areas of organisations. These include human resources, finance and budgeting (Davenport

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