Chapter 8
Business Intelligence

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Category: Organizational Aspects of Knowledge Management

INTRODUCTION

With the rapid advancement of both business techniques and technologies in recent years, knowledge has become an important and strategic asset that determines the success or failure of an organisation. Analyses showed that a competitive advantage in the business environment depends on the accessibility to adequate and reliable information in shortest time possible and the high selectivity in the creation and utilisation of information. An effective instrument to create, aggregate and share knowledge in an organisation has therefore become a key target of management.

As organisations today can no longer spend money on excessive infrastructure and technology that does not provide a quick impact on the business' bottom-line, Business Intelligence (BI) is becoming indispensable to an organisation's success in the emerging global economy. BI is the process of using advanced applications and technologies to gather, store, analyse and transform overloaded business information into knowledge that provides significant business value. The concept of BI has been introduced into the marketplace in order to enhance an organisation's response in making better and more efficient business decisions.

In this article, we introduce the concept of BI and address the importance of BI in revolutionising knowledge towards economics and business

advancement. The main objective is to discuss why the concept of BI has become increasingly important for organisations nowadays. Besides that, we also present some of the key applications and technologies which facilitate BI in an e-Business initiative. Finally, the future of BI is addressed to envision the potential of its growth.

BACKGROUND

As aforementioned, BI in the broadest sense is the process of using advanced and intelligent technologies to gather, store and analyse information in the field of business. According to Pareek (2006), the term was first used and popularised by analyst Howard Dresner of the Gartner Group[1]. It typically describes the process of turning data into information and then into knowledge.

The first probable reference to BI is said to be made in Sun Tzu's "Art of War", where he claimed that to succeed in war, full knowledge on one's strengths and weaknesses as well as the strengths and weaknesses of the enemy must be known. Applying this to the modern business world, BI becomes the art of wading and sieving through tons of data, and presenting the overloaded data as information that provides significant business value in improving the effectiveness of managerial decision making (Turban, King, Lee & Viehland, 2004). As such, BI is carried out not just for gaining sustainable competitive advantages, but it also has a valuable core competence in most instances. A variety of businesses have used BI for activities such as customer support and service, customer profiling, market research and segmentation, product profitability, inventory and distribution analysis, etc.

Many recent studies show that knowledge can be managed using various BI techniques. Knowledge Management (KM) is seen as the helping hand of BI (Haimila, 2001). According to Herschel and Jones (2005), KM is described as a systematic process of finding, selecting, organis-

ing, distilling and presenting information in a way that improves an employee's comprehension in a specific area of interests. They argue that KM and BI are mutually critical components in the management of intellectual capital. Promoting the effective sharing and transfer of these intellectual assets within an organisation is the centerpiece of KM (Call, 2005; Sun & Chen, 2008). Thus, BI and KM must be integrated in order to promote organisational learning and effective decision making (Cook & Cook, 2000). BI is seen as an integral part of a larger KM effort. The effectiveness of BI integrated with KM effort will help not only to promote and enhance knowledge for better decision making, but also improve an organisation's performance. According to Wang and Wang (2008), there should be interactions between knowledge workers through BI techniques and business decision makers for knowledge sharing and improvement to happen in an organisation. The provision of quality information is the key to gaining competitive advantages. Better information leads to better strategies, tactics, and a more efficient decision-making process.

TECHNOLOGIES OF BI

In a BI system, BI tools, data warehouse management tools, ETL (Extract, Transform and Load) and data integration tools are some of the essential elements. The main BI activities include query, reporting, On-line Analytical Processing (OLAP), statistical analysis, forecasting, data mining and decision support. Ensuing subsections will describe data warehousing, data mining and OLAP.

Data Warehousing

In the past, data warehouses used to store aggregated and historical data in a homogeneous database, where the physical storage of data was in a single, centralised data pool (Baumgartner, Frolich, Gottlob, Harz, Herzog & Lehmann, 2005).

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