Concepts and Tools for Marketing Intelligence Development

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ABSTRACT

Business intelligence (BI) is a promising way which let companies to gather large amounts of data, accessing, analyzing that data, and presenting a high-level set of reports that condense the huge amount of that data so that they can make fundamental business decisions regarding business actors (customer, supplier, logistics…). To learn from the past and present time and anticipate the new market trends, many companies are adopting Business Intelligence (BI) tools and systems. There are numerous business intelligence tools to help managers in making the best decisions. The paper give some explanation of the concepts and the components of BI, benefits of BI, tools for BI, the implementation of business intelligence, and a proposal to combine BI and semantic Web. Additionally, the paper describes the popularity and the increase of data and information use from open sources (OS) and its impacts in competitive and marketing intelligence.

Keywords: Business Intelligence Components, Business Intelligence (BI), Marketing Intelligence, Open Source Tools for Business Intelligence, Semantic Web

INTRODUCTION

The Gartner's latest CIO survey says that Business Intelligence (BI) remains one of the top 5 CIO priorities in 2010 (Gartner, 2010). Differently to other information systems, such as management information systems (MIS), decision support systems (DSS), expert systems (ES), and executive information systems (EIS) (O'Brien & Marakas, 2007); Business intelligence is a data driven decision support system that combines data gathering, data storage, and knowledge management with analysis to provide input to the decision process (Negash & Gray, 2004). It includes the technologies, applications, and resources for collecting, integrating, analyzing, and presenting of business data. The term intelligence has been exploited by BI with two different meanings. The first one is the human intelligence capacity applied in business activities and the second most frequently used is related to the intelligence as information valued for its prevalence and relevance. Furthermore, BI provides actionable information delivered at the right time, at the right location, and in the right form to assist decision makers. The first objective is to improve the relevance and quality of inputs to the decision process.

The combination of several existing system capabilities characterize the requirement of unique BI system with unique characteristics. The development of design theory for business intelligence systems from a conceptual model with several interrelated component is useful.

The research in BI has primarily concentrated on either developing analytical tools for BI (Clarabridge, 2006; de Ville, 2006; Watson, Wixom, Hoffer, Anderson-Lehman, & Reynolds 2006) or on its application in a specific business area (Fordham, Riordan, & Riordan, 2002) such as marketing.

The increasing standards, automation, and technologies in modern businesses, have as a result the availability of large amounts of data. The storage of this data are managed by data warehouse technologies organized under specified repositories. However, the examination of the large amounts of data, pertinent information extraction, and the transformation of the information into knowledge which lead to best decision making is the art of Business intelligence.

Business intelligence applications have become the top spending priority of corporate information technology organizations (Gartner, 2009).

Rather than concentrates only on automations, organizations must have a strong focus on decisions and their relations to information. Businesses require to deal with decisions making and execution, how can improve those decisions, and how to use information to support them.

A design theory of BI consisting of a conceptual architecture with a specific design specification has been developed by (Baldwin & Yadav, 1995; Hevner, March, Park, & Ram, 2004; Gregor & Jones, 2007).

Therefore, in this paper we proposed to explores the concepts of BI, its components, a newly important open source tools for BI and a comparison between them.

The rest of the article is structured as follows. First, an introduction to BI and its benefits is described. Second, the BI components is described. Third, tools for BI are described. Fourth, a survey of open source BI tools is described. Fifth, how to choose BI tool is explained. Sixth, business intelligence and semantic Web integration is proposed. Finally, the summary and the perspective for future works are discussed.

BUSINESS INTELLIGENCE AND ITS BENEFITS

The term intelligence includes important meanings in business environments. The existence of good source of business intelligence signify the survival of businesses, which can range from data about their existing customers to intelligence about their competitors (Maguire & Robson, 2005).

However, sometimes information is collected to build up a background understanding of the environment without any clear purpose in mind (Curtis & Cobham, 2005).

The intelligence requires the ability to learn, to understand, or to deal with new or trying situations; the skilled use of reason; the ability to apply knowledge to manipulate one's environment or to think abstractly (Brackett, 1999).

The ability to create information more than to localize or mine it from a huge amount of data is more related to intelligence. According (Turban et al., 2004), intelligence is creative and human reasoning which enables recognition of relationships between things, the ability to sense qualities and spot patterns that explain how various items interrelate .

The resulting output from the BI process (process input of information) is an actionable knowledge, which includes intelligence related to the business.

Organizations lack clarity on who should make decisions (Rogers & Blenko, 2006). Decision process requires to hardly know the scope of the problem and the potential benefits, and its responsibility to follow the results of their key decisions. The variety of information inputs available to provide the intelligence needed in decision making is showed in Figure 1.

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