

Designing a Model for Implementation of Business Intelligence in the Banking Industry

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ABSTRACT

Numerous researches have been carried out on implementation and employment of business intelligence, but in the past researches only specific aspects and dimensions have been studied while factors affecting implementation process and interactions between them are not widely considered. In such circumstances, it is vital to identify key factors affecting business intelligence implementation process and determine communication structures between these factors. In the present article, reviewing the related literature and obtaining experts' opinions using fuzzy Delphi techniques is first, followed by key factors affecting the process of business intelligence implementation and important criteria of effectiveness for business intelligence in the Iranian banking industry were identified, and then using a method of interpretive structural modeling, relationships between factors were determined and analyzed. Finally, the interactive structure of the factors, i.e. business intelligence implementation, a model is presented. Using confirmatory factor analysis and path analysis methods, model validation was conducted. Leading to the determination that while that transition for some companies has been attempted, not all current efforts have been successful.

KEYWORDS

Banking Industry, Business Intelligence, Fuzzy Delphi Technique, Implementing Business Intelligence, Interpretive Structural Modeling

INTRODUCTION

In recent years, business intelligence technologies have become a significant concept in the information systems management, mixed with progressive organization's culture and stood on the forefront of information technologies in supporting decision making. In order to have a quick reaction to the market changes, organizations need managerial information systems to make different causal analyses about organization and its environment. Meanwhile, business intelligence systems which are the most complicated information systems provide a tool based on which information needs of the organization are properly fulfilled. In fact, business intelligence systems provide updated, reliable and sufficient trade information making it possible to deduct and understand concepts lying in trade information through process of discovery and analysis (Azoff & Charlesworth, 2004).

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Gartner (2009), a leading company in business analysis, carried out a research on 1500 information senior managers throughout the world and identified business intelligence as the first priority of technology. Thus, implementation and establishment of business intelligence systems have turned into a major priority for organizations information senior managers (Yeoh & Koronios, 2010). But implementation of business intelligence system like other organizational solutions for information technology had different results in different companies. Some organizations have reported that their business intelligence systems have been successful while others reported that they failed in its implementation (Sangar & Iahad, 2013). In fact today many organizations have adopted business intelligence systems for improving decision making process, however, not implementations of all have been successful despite being used by so many organizations (Zare Ravasan & Rabiee, 2014).

Implementation of information systems at organization level has been a vital step that can lead to disorders and problems in the organization especially regarding implementation of business intelligence system where there are more complications and problems since such systems relate to decision making which is a complex and abstract task influenced by environment's potential and condition. Implementing business intelligence system requires diverse infrastructure and is financially considered as an expensive project implemented throughout organization. Research shows that about 50-70 percent of business intelligence projects fail at the stage of implementation (Taqla & Noori, 2014). In fact, implementing business intelligence technology is often accompanied by much suffering of failures leading to waste of time and resources (Bargshady et al., 2014). Thus, while market for business intelligence seems turbulent, establishment of business intelligence system is complicated and expensive. Generally, development and implementation of business intelligence has high risks and hazards for organizations (Farrokhi & Pokoradi, 2012). Therefore, despite the fact that implementing business intelligence has become a major priority for organizations' information senior managers, not all have been successful in its implementation (Yeoh & Koronios, 2010).

Based on studies on business intelligence literature, different researches have been carried out on different fields including: Vital factors of implementation success (Zare Ravasan & Rabiee, 2014; Hwang et al., 2004; Yeoh & Koronios, 2010; Ariachandra & Watson, 2006; Olsak & Ziemba, 2012; Yeoh & Popovic, 2015; Hawking, 2013; Vodapali, 2009), Application and implementation of business intelligence (Ramakrishnan et al., 2012; Popvic et al., 2012; Seah et al., 2010; Boyer et al., 2010; Wixom & Watson, 2001; Grubljesic, 2014; Doodly, 2015; Chasalow, 2009), System performance (Lin et al., 2009), Business intelligence system adoption (Ramamurty et al., 2008; Hwang et al., 2004), Capabilities and applications of business intelligence (Isik et al., 2013; Moro et al., 2015; Isik et al., 2011), Intelligence maturity (Najmi et al., 2010; Popovic et al., 2009), Implementation readiness factors (Bagshady et al., 2014; Anjariny et al., 2012), Performance evaluation (Lin et al., 2009; Rouhani et al., 2012). But in each of these studies, implementation and establishment of business intelligence process has been examined in a different dimension, angle and aspect. In fact, in these studies, business intelligence implementation has not been inclusively examined by a systemic and holistic approach. Also, relationships and interactions between factors affecting implementation process of business intelligence have rarely and incompletely been studied in the research. This is while business intelligence system has social-technical dimensions with many elements and much complication and its process of development and implementation requires perception of elements and their interrelationships in the particular social context of the system application. In other words, in the past researches the quality of complete process of business intelligence implementation and how factors affecting this process interact is not discussed. Thus, the present study examines this important problem in the context of Iranian banking industry with a process approach. Therefore, these factors are identified and classified through studying the related literature and considering factors affecting the implementation process of business intelligence such as organization readiness, system design and development, project management, system adoption, system abilities, and intelligence maturity in the Iranian banking industry environment. Also in this research, evaluation criteria for business intelligence effectiveness and intra- interaction of factors affecting the implementation is

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