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

Salah Rezaie, Department of IT Management, Economics and Management Faculty, Science and Research Branch, Islamic Azad University, Tehran, Iran
Seyed Javad Mirabedini, Computer Faculty, Central Tehran Branch, Islamic Azad University, Tehran, Iran
Ataollah Abtahi, Department of IT Management, Economics and Management faculty, Science and Research Branch, Islamic Azad University, Tehran, Iran

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).

DOI: 10.4018/IJEIS.2018010105

Copyright © 2018, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.
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 (Taqwa & Noori,
2014). In fact, implementing business intelligence technology is often accompanied by much suffering
of failures leading to waste of time and resources (Barghady 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 ad
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 & Ziembia, 2012;
Yeoh & Popovic, 2015; Hawking, 2013; Vodapali, 2009), Application and implementation of business
intelligence (Ramarkrishnan et al., 2012; Popvic et al., 2012; Seah et al., 2010; Boyer et al., 2010;
Wixom & Watson, 2001; Grubljesc, 2014; Doody, 2015; Chasalow, 2009), System performance (Lin
et al., 2009), Business intelligence system adoption (Ramamurtty 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 (Baghshady 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
Managing the Implementation of Business Intelligence Systems: A Critical Success Factors Framework
www.igi-global.com/article/managing-implementation-business-intelligence-systems/2147?camid=4v1a

Achieving System and Business Interoperability by Semantic Web Services
www.igi-global.com/chapter/achieving-system-business-interoperability-semantic/18926?camid=4v1a