Critical Factors for Implementation Success of ERP Systems:
An Empirical Investigation from Bahrain

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Abstract

Research on enterprise resource planning (ERP) systems implementation has drawn much attention, in the last decade. Identifying and testing the critical factors that affect implementation success for this type of systems is one of the important streams of research in this field. Based on data gathered from a sample of 70 respondents, actively involved in their companies’ ERP implementation process, this study aims to extend this stream of research with another framework of success factors based on a developing country setting, namely Bahrain. The influences of some selected critical factors were examined on two success dimensions: project success and business metrics success. Results support previous research findings in this area concerning the impact of factors such as project planning, organizational resistance, and ease of use on ERP project success metrics. Also, the study results show that project planning, business process reengineering, and organizational fit have significant influence on business success metrics. However, no significant impact was found for some classical success factors such as top-management support, technical fit, training, competitive pressure, and strategic fit on both project and business success. The article ends with implications for these findings and possible extensions for the study.

Keywords: ERP implementation; IS critical success factors; IS use in Bahrain

Introduction

The increasing adoption of enterprise-wide systems packages such as ERP systems we have witnessed in the 1990s and the beginning of this decade has been considered as a shift in corporate computing (Sandoe, Corbitt, & Boykin, 2001; Davenport, 2000; Turban, Aronson, & Liang, 2005). The essence of this shift is twofold. First, it helped replacing the firm’s many stand-alone applications that could not communicate with each other within the organization or externally with customers and suppliers with large systems that facilitate enterprise-wide integration. Second, it stimulated organizations’ IT strategies to rely more on purchasing large applications software such as ERP systems instead of in-house-built information systems. These packages offer
general or universally applicable solutions that claim to embody “best practices” of business integration.

ERP systems could be defined as comprehensive software packages that seek to integrate the complete range of business processes and functions in order to present a holistic view of the business from a single information and information technology architecture (Gable, 1998). Among the most important attributes of ERP systems are their abilities to automate and integrate an organization’s business processes, share common data and practices across the entire enterprise, and produce and access information in a real-time environment.

Having made substantial progress toward putting these packages in place, organizations began to work on realizing and extending the benefits from these systems. In a field study by Market Data Group, it was found that main perceived benefits of implementing ERP systems are standardizing or improving business processes; lowering costs; solving Y2K problem of the legacy systems; and accommodating corporate growth or market demand (Connolly, 1999). Tangible benefits included reduction in staff, operational efficiencies, reduction in training, and better inventory management. Also, sources of intangible benefits included better compliance with the customer requirements, improved systems reliability, higher data quality, and greater agility in implementing new businesses.

On the other side, the scale and complexity of these systems have proved a challenge to both IS specialists in terms of implementation and to business management in terms of managing business changes essential to gaining benefits from these very expensive investments. In fact, the use of ERP systems has not always led to significant organizational improvements. In many cases, problems in implementing these systems have led to failures. For example a survey of ERP implementers reported that 51% of the ERP systems implementation projects were judged to be unsuccessful by the ERP implementing firms (Aiken, 2002). However, as investments in ERP systems continue to increase, implementation problems suggest that causes of these problems or failures need to be understood and solutions leading to success need to be found (Calisir & Calisir, 2004).

Responding to this need, various streams of research have appeared recently. The first and probably the most famous is the one concentrating on identifying ERP systems’ critical success factors (Bingi, Sharma, & Golda, 1999; Holland, Light, & Gibson, 1999). This line of research has its roots in IS success studies in the past two decades (Delone & Mclean, 1992). Somers and Nelson (2004) saw that better description of IS implementation success came from understanding the key players and activities associated with ERP implementation.

Diffusion of Innovation (DOI) is another important trend used for studying ERP implementation success (Bradford & Florin, 2003). DOI research has evolved from a focus on the organization’s innovation, its organizational characteristics, and also its environment as the main groups of variables that affect the diffusion of IT in organizations.

Another important approach for studying ERP implementation is the process approach. By contrast to the previous lines of research in this subject, this approach seeks to explain outcomes by explaining sequences of events overtime, which are classically presented in stages of implementation life cycles (Markus, Tanis, & Van Fenema, 2000; Rajagopal, 2002). Combining both factors and process views has attracted many researchers, resulting in other frameworks that classify success factors into different stages of ERP implementation life cycle (Nah, Lau, & Kuang, 2001; Somers & Nelson, 2004). Many other researchers are still trying to use this literature and empirical evidences to group and subgroup critical success factors into frameworks that interpret different ERP problems’ settings (Amoako-Gympah, 2005; Somers & Nelson, 2004).

This study tries to extend this literature by suggesting a set of factors that affect success in a developing country setting, namely Bahrain. In the study’s theoretical model, we included two separate success metrics: project success
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