ERP-Related Issues and Challenges in Turkey: An Overview from ERP Experts

Gülay Ekren[1*], Alptekin Erkollar[2], Birgit Oberer[2]

1 Sinop University, **2** Sakarya University, * Corresponding author, ekrengulay@gmail.com

Abstract

The Enterprise Resource Planning System (ERP) is an integrated information system for competitive enterprises in the era of globalization, especially for managing their activities effectively. These systems are enormously complex systems that require tremendous investment on especially consulting, training, hardware, and software within corporate time and resources. Moreover, their implementation processes often entail significant challenges, difficulties, and risks. In this paper, it is aimed to introduce the most important issues and challenges of implementing an ERP system, in both large enterprises and SMEs in Turkey. Exploratory research was conducted by using a small-scale survey among 31 ERP experts of 31 Turkish companies from different industries. The findings show that user resistance is the most compelling factor influencing ERP implementation success in Turkish companies. Additionally, lack of well- planned project duration and implementation steps, as well as inadaptability with ERP product are the other notable factors affecting native ERP implementation success.

Keywords: ERP systems, ERP implementation success, Exploratory research, Turkey.

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Keywords

ERP Systems; ERP Implementation Success; Exploratory research; Turkey.

Introduction

ERP systems integrate various computer software and hardware components to enable information flow throughout the organization. These systems help enterprises in automating and integrating corporate cross-functions such as product development, inventory control, purchasing, distribution, finance, accounting, and human resources. They also provide a unified database to gather data from different system modules where all business transactions are processed, monitored, and reported through a unified enterprise view including all functions and departments of businesses (Babaei, Gholami & Altafi, 2015). According to Moller (2005), the critical factors for adopting ERP systems are old legacy systems, globalization of businesses, primarily focus on process standardization, national and international regulatory environments, and trends towards collaboration on software vendors. Malhotra and Temponi (2010) identified the critical decisions necessary in selecting and implementing an ERP system and recommend the best practices for small and medium-sized enterprises (SME). According to Malhotra et al. (2010), ERP implementation should be well-planned, and the requirements and business processes of the SME must be identified and documented. Since SMEs are considered the backbone of the economy of the countries around the world but they are facing significant challenges to the ERP implementation.

Understanding such these issues and challenges will enable enterprises to be more proactive in planning ERP budget and duration. In accordance with an independent research conducted between March 2016 and February 2017 within 342 respondents of ERP customers regarding enterprise systems, vendors, consultants and overall ERP implementations, 70% of the enterprises have successful implementation, 74% of them over budget as well as %59 of them over schedule, and also they spend on average 3.6% of their annual revenue on ERP projects. Besides, 78% of respondents realized business benefits of ERP systems like increased integration, availability of information, improved productivity and data reliability, and better decision making (Panorama Consulting Solutions, 2017). In spite of perceived value of ERP systems, there are many studies which examine perceptions of different stakeholders (e.g. IT staff, ERP consultants, experts and accountants) regarding the issues and difficulties on the implementation of ERP systems (Kanellou & Spathis, 2013; Babaei et al., 2015; Chofreh et al., 2018). Additionally, there is no study about the implementation of ERP systems as well as how and in what aspects they affect the large and small enterprises in Turkey.

This paper aims to explore existing issues and challenges related to the implementation of ERP systems in Turkey. This study aimed to answer the following research questions: (1) Which ERP systems are generally preferred to use by the companies in Turkey? (2) Which ERP implementation strategies are used by the companies in Turkey? (3) What are the factors influencing the companies' ERP implementation success in Turkey?

ERP Implementation: Issues and Challenges

In recent years, ERP has become a "must have" as well as a robust system for many businesses to gain competitive advantage. However, the implementation of ERP systems can be very risky if not planned and managed properly (Markus et al., 2000; Sun, Ni, & Lam, 2015). According to Helo et al. (2008), the difficulties encountered during the implementation of ERP systems are not only due to the over budget and long delays in the implementation schedule but also due to the technological issues (e.g. technological complexity, computers and network connections), organizational issues (e.g. organizational culture, incompatible business processes, top management commitment) and human-related issues (e.g. resistance to change, training and user support, communication). These issues are examined through a survey in Iran by Babaei et al. (2015) to identify critical issues and challenges in ERP implementation. According to the results; organizational barriers (especially lack human resources) and technological factors (e.g., unbalanced combination in team projects) are the most critical challenges of ERP implementation, but individual factors (e.g., lack of top management commitment and support) are the least essential challenges to implement an ERP system. However, Sheu, Chae, and Yang (2004) interviewed managers who participated in their

overseas ERP implementation projects and found that the lack of technical personnel resources in ERP projects is the most critical challenge of ERP implementation. As Dezdar and Ainin (2011) examined the organizational factors positioned behind the success of ERP implementation and found that there is a positive relationship between top management support (financial and non-financial), enterprise-wide communication, training, and ERP implementation success.

A conceptual framework proposed and examined by Rajan and Baral (2015) explored the effect of individual, organizational, and technological factors on the ERP usage and end-users. The findings suggest that computer self-efficacy; organizational support (e.g., top management support), training, and compatibility are positively affected by ERP usage and individual performance. As Nwankpa (2015) suggested that if the system usage by the end-user increased, it is much easier to achieve ERP implementation goals and objectives. Therefore, end-users are positively influenced by ERP system usage, and usually, ERP usage problems have been dedicated to the inadequate training of end-users. Likewise, Chang et al. (2008) proposed a conceptual model to analyze factors affecting the ERP system usage. According to the proposed model, social factors, compatibility, and near-term consequence have a significant effect on the ERP system usage. The results suggest that successful implementation of an ERP system requires interoperability amongst different departments and top management must make an effort on staff to use the system. Consistent with these findings, Lin (2010) developed an empirical model to examine the effects of information system quality and top management support on ERP system usage. The result of the study shows that perceived usefulness and satisfaction of users with the ERP system affect the ERP system usage. Additionally, top management support influences both perceived usefulness and ERP system usage.

Babaei et al. (2015) summarized the main challenges of ERP implementation as follows: (1) lack of human resources, (2) user resistance to change, (3) lack of senior management involvement, (4) lack of flexibility and a good understanding of the all organization dimensions to align processes with ERP, (5) absence of balanced combination within the project teams arising from poor communication, (6) difficulty in coordinating and training software for ERP implementation. Additionally, Bingi et al. (1999) summarized critical implementation concerns as follows: the sustained commitment of top management; well-established business process re-engineering; well integrated and specialized modules; selecting the right ERP consultants; well-planned implementation time; well-managed implementation costs; a suitable ERP vendor; selecting the right employees; training of employees; and improving employee morale.

Methodology

The objective of this study was the Turkish companies that have implemented ERP systems. To collect data, a small-scale survey as an informant method was carried out among a selected number of participants. The survey was distributed to participants of companies adopting ERP implementation in Turkey, and these participants were titled as ERP experts in this study. They were selected via Linkedin network according to their proficiency using the following three criteria: (1) a staff engaging on a number of ERP implementation projects within five years, (2) key user of his/her company's ERP system, and (3) senior ERP Expert/Specialist who is active worker for a company. 31 Turkish companies (Table 2) from various sectors (Table 1) took part in this study. At least one ERP expert per firm including only practitioners was offered to attend our survey. As total 64 experts were selected randomly, however, 31 of them were interested in contributing to this survey. Ultimately, the total response rate was 48.4%.

A web-based survey instrument which consists of a questionnaire, as well as a few open-ended questions, was developed and administered by authors. Then, an email containing a URL link to the web survey was sent to participants. The survey closed within 30 days (from June 5 to July 6, 2018). The findings of the survey were interpreted using descriptive analysis.

INSERT TABLE 1 HERE

INSERT TABLE 2 HERE

INSERT TABLE 3 HERE

Results

Type of ERP system and ERP implementation strategy

55% of participants implemented global ERP systems (SAP ERP, IAS Canias ERP, IFS ERP, Oracle ERP, Microsoft Dynamics AX, IFA ERP). On the other hand, 45% of participants implemented native ERP systems (Logo ERP, Uyumsoft WebERP, Freedom ERP, CPM ERP, Login ERP, Nebim ERP, Workcube ERP). 64% of participants reported that their ERP software is functionally the most suitable system for their company. With regards to an ERP implementation strategy, 55% of participants reported that they ended up working with their legacy system and started working with the new system (an ERP system). The others (45%) reported that they continued to work with the legacy system while the new system was being built.

The factors influencing the company's ERP implementation success

25 participants (Table 3) reported vital considerations to determine the factors influencing ERP implementation success of their company. According to the 12 participants who are using global ERP systems reported factors affecting their ERP implementation success as follows (Table 4):

INSERT TABLE 4 HERE

According to the 13 participants who are using natural ERP systems reported factors effects the success of ERP implementation as follows (Table 5):

INSERT TABLE 5 HERE

Conclusions

ERP systems have many socio-technical challenges due to their complicated implementation process and the different types of end users. According to findings of this study, the Turkish companies are using both global and native ERP systems, and the factors influencing their ERP implementation success differs according to the type of ERP system (as global or native) that implemented by them. Twenty-five ERP experts who are using both global and native ERP systems in Turkish companies reported that the most compelling factor influencing their ERP implementation success is user resistance. Besides, the other most notable factors that affect global ERP implementation success are respectively; reengineering the processes for the new system, complicated to make an ERP culture and sharing common sense, and user training. In a similar vein, the other most notable factors that affect native ERP implementation success are respectively; lack of well-planned project duration and implementation steps, inadaptability, familiarity with ERP product, end-user training, difficulties on the way doing business as well as in the execution of the two different systems, and lack of senior management support.

This study has various limitations. Firstly, the responses of ERP experts are acquired via the message handling system of the Linkedin network. These findings may be subject to potential biases. It would be desirable to use alternative ways to validate these findings. Secondly, the sample size of this survey is almost small, but the obtained empirical data can be considered as a discussion opener for future studies on ERP usage in Turkey. Finally, this research focuses on limited ERP systems and industries. Future research should conduct more in-depth analysis to explore existing state and challenges related to the usage of ERP systems in Turkey as this study may serve as inspirational ideas for future projects.

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Tables

Table 1

Participants' Profile

Participants' Position	*f*	Type of Industry	*f*
Director of Information Technologies/CIO	6	Production/Manufacturing	7
ERP Project Manager	5	Construction	4
ERP Deputy Director/ERP Manager	5	Retail	4
Senior ERP Specialist/ERP Specialist	4	IT/Software/Electronic	4
Manager/Project Manager/Software Manager	3	Fast Consuming	2
Process Development Manager	2	Textile	2
Finance Director/ERP Financial Affairs	2	Machine/Chemical	2
Business Owner	1	Business services	1
General Manager	1	Automotive	1
Senior Project Specialist	1	Cooling services	1
Software Support Specialist	1	Others	3
Total	31	Total	31

Table 2

Profile of participants' firm

Range	*f*	Range	*f*
Number of employees		Annual revenue (TL)	
Less than 100	6	Less than 10 million	4
100-250	6	10 million-50 million	6
251-500	7	51 million-100 million	3
501-1000	4	101 million-1 billion	3
1001-5000	6	More than 1 billion	3
More than 5000	2	Total	19
Total	31		

Table 3

Profile of the participants responded to open-ended questions

	Sector	Business Size (for headcount)	Position	The ERP System (in-service)
#P1	Cooling services	Large Enterprise	Senior ERP Specialist	IAS Canias ERP
#P2	Business services	SME	Business Owner	Nebim ERP
#P3	Textile	Large Enterprise	Senior ERP Specialist	Uyumsoft ERP
#P4	IT	SME	General Manager	Oracle ERP
#P5	Manufacturing	SME	ERP Manager	Uyumsoft ERP
#P6	Production	Large Enterprise	Process Development Manager	SAP ERP
#P7	Production	SME	CIO	CPM ERP
#P8	Cargo Handling	Large Enterprise	ERP Manager	Oracle ERP

#P9	Production	SME	Director of IT	IAS Canias ERP
#P10	Software	Large Enterprise	Senior Project Specialist	Logo ERP
#P11	Retail	Large Enterprise	ERP Manager	SAP ERP
#P12	Construction	Large Enterprise	Director of IT	IFS ERP
#P13	Manufacturing	SME	ERP Manager	Login ERP
#P14	Construction	SME	ERP Project Manager	SAP ERP
#P15	Chemical Industry	SME	Director of IT	Workcube ERP
#P16	Electronic	Large Enterprise	ERP Manager	Uyumsoft ERP
#P17	Production	Large Enterprise	ERP Project Manager	IFS ERP
#P18	Machine	SME	ERP Project Manager	IFA ERP
#P19	Fast consuming	Large Enterprise	Manager	SAP ERP
#P20	Textile	Large Enterprise	Project Manager	IAS Canias ERP
#P21	Fast consuming	Large Enterprise	Software Manager	Uyumsoft ERP
#P22	Aviation	Large Enterprise	ERP Specialist	SAP ERP
#P23	Construction	Large Enterprise	ERP Project Manager	Freedom ERP
#P24	Retail	SME	ERP Specialist	Logo ERP
#P25	Electronic	SME	Production Manager	CPM ERP

Table 4

Key considerations from participants using global ERP systems

	Factors affecting global ERP implementation success	Participants
1	User resistance on old habits, dependency on the legacy system	P1, P4, P6, P9, P14
2	Trying to make an ERP culture	P8, P14
3	Sharing common sense, difficult to create awareness and discipline among all employees	P8, P9
4	The experienced consultancy	P11
5	Reengineering the processes for the new system, changing the way of doing business	P11, P14, P19
6	Cultural problems	P12
7	Management of user training, lack of user training	P14, P20
8	Setting up the team and key users	P17
9	Need for qualified and experienced staff	P22
10	Competing with many error screens	P22
11	ERP vendor support	P8

Table 5

Key considerations of participants using native ERP systems

	Factors affecting native ERP implementation success	Participants

1	Lack of well-planned project duration and implementation steps	P2, P10, P24, P25
2	End-user training with real-life data, essential user training	P2, P10
3	Lack of teamwork	P3
4	Lack of senior management support, top management support	P3, P5
5	Inadaptability, familiarity with ERP product	P7, P10, P13, P21
6	User resistance	P10, P15, P18, P21, P23
7	Having enough qualified staff	P16
8	ERP support staff	P24
9	Lack of common language with ERP vendor	P25
10	Difficulties on the way of doing business, difficulties in the execution of the two different systems	P15, P25