

**CRITICAL SUCCESS FACTORS IN ENTERPRISE RESOURCE
PLANNING IMPLEMENTATION IN INDUSTRIAL ORGANIZATIONS:
CASE STUDY (ESFAHAN STEEL COMPANY)**

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A Dissertation Submitted In Partial Fulfillment Of The
Requirements For The Award Of The Degree Of
Master Of Science (IT Management)

Advanced Informatics School
Universiti Teknologi Malaysia

DEC 2013

ACKNOWLEDGEMENT

This master thesis was written in part fulfillment of master program in Information Technology Management, UTM University. First and foremost, thanks to GOD for helping me to write this report. It is obvious to us that this work would not have seen light if it was not for the support that we had from several persons. I'd like to convey my personal appreciation in order to my supervisors Dr. Nurazean Maarop for support and guidance during the work.

I cannot end without thanking my family especially my wife Shamin Nakhat for encouraging and supporting me throughout my studies. She has been an inspiration for me. I am forever thankful to my family for their understanding, constant encouragement and love when it was most required. Lastly, I wish to thank everyone else who gave me the determination to fulfill this particular dream.

ABSTRACT

In order to survive in a rapidly changing business environment, organizations must improve their own business practices and procedures. Enterprise resource planning (ERP) systems can be considered as the most important development in the corporate use of information technology and are beginning to be the backbone of organizations. The difficulties and high failure rate in implementing ERP systems have been widely cited in the literature. Factors affecting ERP implementation are complex and abundant and numerous authors have identified a variety of factors that can be considered to be critical to the success of an ERP implementation. In this research, the critical factors that affect ERP systems implementation success in Esfahan Steel Company (ESCO) in Iran have been identified and the importance of these factors has been investigated. Through a comprehensive review of the literature, 8 factors were found to be critical to ERP implementation success. A conceptual framework that determines critical factors which influence the ERP implementation will be developed. The importance of these factors was investigated within the qualitative method with conducts 18 asynchronous online interviews with managers and non-managers has been done to obtain a general understanding of what the critical success factors (CSF) of implementing ERP. "Top management support" and "User Education and Training" have been shown to be the extremely important factors for ERP implementation and in addition, "Business Process Reengineering" was found to moderate the relationship between CSFs and ERP's success in ESCO. This study will extend in the research field of successful implementation ERP to have more knowledge in term of implementation ERP.

ABSTRAK

Dalam usaha untuk terus hidup dalam persekitaran perniagaan yang pesat berubah, organisasi perlu meningkatkan amalan perniagaan mereka sendiri dan prosedur. Perancangan sumber perusahaan (ERP) sistem boleh dianggap sebagai pembangunan yang paling penting dalam penggunaan korporat teknologi maklumat dan mula menjadi tulang belakang kepada organisasi. Kesukaran dan kadar kegagalan yang tinggi dalam melaksanakan sistem ERP telah meluas dinamakan dalam kesusasteraan. Faktor-faktor yang mempengaruhi pelaksanaan ERP adalah rumit dan banyak dan banyak penulis telah mengenal pasti pelbagai faktor yang boleh dianggap sebagai kritikal kepada kejayaan pelaksanaan ERP . Dalam kertas ini , faktor-faktor kritikal yang memberi kesan kepada sistem ERP kejayaan pelaksanaan dalam Syarikat Steel Esfahan (ESCO) di Iran telah dikenal pasti dan kepentingan faktor-faktor ini telah disiasat. Melalui kajian semula yang komprehensif kesusasteraan , 8 faktor didapati kritikal kepada kejayaan pelaksanaan ERP. Rangka kerja konsep yang menentukan faktor-faktor kritikal yang mempengaruhi pelaksanaan ERP itu akan dibangunkan . Kepentingan faktor-faktor ini telah disiasat dalam kaedah kualitatif dengan mengendalikan 18 temu bual dalam talian dengan tak segerak CEO, CIO dan pengurus dan pengguna akhir yang telah dilakukan untuk mendapatkan pemahaman umum tentang apa faktor-faktor kejayaan kritikal (CSF) dalam melaksanakan ERP . "Sokongan Top pengurusan" dan "Pendidikan pengguna dan Latihan " telah ditunjukkan untuk menjadi faktor yang sangat penting untuk pelaksanaan ERP dan di samping itu, " Proses Perniagaan Reengineering " didapati sederhana hubungan antara CSFs dan kejayaan ERP dalam ESCO .

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LIST OF ABBREVIATIONS

ERP	-	Enterprise Resource Planning
CEO	-	Chief Executive Officer
IT	-	Information Technology
CSF	-	Critical Success Factor
ESCO	-	Esfahan Steel Company
CIO	-	Chief Information Officer
CFO	-	Chief Financial Officer
BPR	-	Business Process Reengineering

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Botta-Genoulaz and Millet (2005) describe ERP (Enterprise Resource Planning) system as an integrated software package to govern the resources of an organization. ERP systems consolidate all departments and tasks of an organization into an individual computer system that fulfills diverse departmental demands.

Effective and efficient use of ERP would bring many advantages for an organization including transacting information faster, reduction in the inventory cost, more effective management in financial issues, more efficient supply chain management, better customer management, reduction in cost of logistics, higher levels of flexibility and productivity as well as basing fundamentals to implement e-commerce and precise distribution of knowledge amongst the organization (Davenport, Harris & Cantrell, 2004). However, in order for an organization to achieve these benefits, ERP should be planned considering various aspects carefully.

According to Zhang and Lee (2005) many ERP systems has failed due to delays in implementation and over-budget reports that used up other resources. In fact, ERP can be considered the biggest IT investment in an organization; therefore recognizing the critical factors that contribute to failure of this system and identify resolutions to them is very crucial (Teltumbde, 2000).

1.2 Background of the Problem

Successful implementation of ERP is important in transacting information of enterprises although it's complete implementation is impossible without human and organizational supports. It is important to consider staff's attitude towards this system since they are needed to support ERP projects. However, internal processes of the organizational and managerial commitments and support play a significant role to unite the human efforts towards the objectives of the enterprise wide systems (Dutta and Roy, 2008).

More than 70% of the ERP projects were judged to be unsuccessful by the ERP implementation firms, and also 90% of them are reported as late and over-budget (Turban, McLean & Wetherbe, 2008).

Werlinger, Hawkey and Beznosov, (2009) discuss that every ERP system encounters various challenges that are not only due to technological factors, but human and organizational elements are very critical as well.

According to Ifinedo (2012) many organizations faced failure to implement ERP projects due to lack of insight into the possible risk of human elements. In fact

the human resources are internal factor of the companies and it is vital for the organizations to concentrate this significant factor to avoid ERP failure causes.

Moohebat and Jazi (2010) declares that successful implementation of ERP is crucial in public organizations and is required to be supported by top management; factors such as education and training and user involvement are important to implementation of ERP. In those organizations the staff is required to remain well informed about the benefits and advantages of ERP through intensive training programs.

Many researchers have tried to distinguish the vital factors leading to the successful implementation of ERP. These factors have so far distinguished as the nature of organization, user, and technical or cultural factors (Chien & Tsaur, 2007; Gargeya and Brady, 2005; Ifinedo, 2012; Al-Mashari, Zairi & Al-Mudimigh, 2010; Kim, Lee & Gosain, 2005; Yusuf, Gunasekaran, & Abthorpe, 2004; Zhang *et al.*, 2005).

Dezdar and Ainin (2011) analyses and examines factors that affect successful implementation of ERP in Iran. They manipulated an integrated model including the ERP project environment, the organizational environment and ERP system environment. The present study, however, emphasizes on the factors that represent the ERP project environment. According to Dezdar *et al.* (2011) these factors are very crucial to ERP's success particularly in the Iranian context. He developed a model that illustrates CSFs for ERP implementation in Iran. His research illustrates that ERP project environment is one of the main factors to ensure the success of ERP implementation in Iran. The aim of this paper is analyze ERP environment related factors influence on ERP implementation in an under-developed country, namely Iran.

1.3 Problem Statement

Based on the literature review, it has found that there is a sufficient of work has been done to identify success factors for implementing ERP across the globe and main critical factor namely are top management support and user training and education. These factors will be amended due to geographical location of the organization that ERP is implemented. A great number of ERP dependent studies are conducted around the world, however majority of them are associated with the developed countries and the researches regarding ERP implementation in developing countries becomes essential (Alizadeh & Hanifzadeh, 2006; Dezdar *et al.*, 2011).

Islamic Republic of Iran is a developing country in which many companies try to alter their own conventional information systems to be able to access new information systems such as Supply Chain Management (SCM), Management Information System (MIS) and ERP (Alizadeh & Hanifzadeh, 2006). At the present time the volume of ERP implementations is grown vastly; nevertheless, minor studies and researches have already done regarding ERP systems in Iran and the results clarify that there is a lack of information about the impacts of ERP project environment factors (Dezdar *et al.*, 2011). The resolution is to create a holistic framework to reflect the influences of those factors on the effectiveness of ERP project implement successfully in organizations.

This study tries to identify several factors in Iran's context that firms should really adhere to when they plan to implement ERP system and purpose of signifying a conceptual framework to facilitate further studies through this study. This study designed to investigate the CSFs of implementing ERP in due case of Esfahan Steel company (ESCO) in Iran.

1.4 Research Questions

The followings are the research questions to comply with this research:

1. What are the critical success factors that might have effect on ERP implementation in organizations?
2. What is the proposed conceptual framework of critical success factors on ERP implementation in industrial organization?
3. What aspects of critical success factors are of most concern to implement ERP in industrial organization?

1.5 Research Objectives

The objectives of this research are as follows:

1. To identify the critical success factors that effect on ERP implementation in organizations.
2. To develop the proposed conceptual framework of factors that may effect on success of ERP project in Esfahan Steel Company (ESCO).
3. To analyze the critical factors those play a major role in the success of ERP implementation in Esfahan Steel Company (ESCO).

1.6 Scope of the Study

This research emphasizes on the critical success factors that may cause ERP project implementation successfully in Iranian organizations (Foundrymen-Casting industry). Also, one of the main national companies is selected as the scope of the study.

Esfahan Steel Company (ESCO) is the first and largest manufacturer of constructional steel products in this country. This complex started production with annual capacity of 600,000 MT in 1971. With regards to the state of information technology, ESCO has been reconstructed and expanded vastly (Pioneer in Steel Industry of Iran, 2011) and adopted ERP system within the organization in this firm. Currently, ERP is utilized in its information system and knowledge management system. It is considered as the pioneer Iranian company that implemented ERP and officially registered under the Iranian Foundrymen's Society (IRFS, 2012).

However, since the framework was developed, this research is an attempt to identify the other success factors in the Iranian context to improve the mentioned framework. In this study the has been applied purposive sampling to collect the qualitative data via asynchronous online interview among the ERP team members, top and middle management, and IT staff and also end user of system. This target group has chosen because, they are directly interacting with the system, and they can provide the actual and accurate insights with the implementation of ERP project.

1.7 Significance of the Study

The findings of this research will illustrate a framework to can be used to provide guidelines to implement success ERP project. The study's results will also contribute to collect useful knowledge that supplementary researches can generate theories in ERP systems. So, this research can provide a deep insight into the existing challenges for implementing ERP systems. In addition, the recommended conceptual framework could base a useful platform for future studies. Findings of this study will help to develop a positive attitude and more effective management strategies in ERP implementations. As a result, this study is significant in funding of critical success factors from the past lessons learned of ERP implementation.

1.8 Summary

In this chapter a brief overview about the concept of the project and procedure to achieve its objectives has been discussed. The problem background and statements has been mentioned in this chapter to provide a clear background and introduction of the project to clarify the causes of the concerned proposal. The objectives, scope and significance of this project were also distinguished and pointed out for a more effective and efficient elaboration on the proposed subject.

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