L.B /DON/103/07

62.

APPLICATION OF BPR IN ERP IMPLEMENTATIONS

By

W.A.D.J. Weerakkody

LIBRAIN TIVERSITY OF MORATUVIA, SRI LADIXA MORATUVIA



University of Moratuwa, Sri Lanka. Electronic Theses & Dissertations www.lib.mrt.ac.lk

The Dissertation was submitted to the Department of Computer Science & Engineering of the University of Moratuwa in partial fulfilment of the requirement for the Degree of Master of Business Administration.

Department of Computer Science & Engineering

University of Moratuwa

December 2006

University of Moratuwa 89457

8.94.5 /

007.006" CCA SCA

89457

Declaration

I certify that this dissertation does not incorporate, without acknowledgement, any material previously submitted for a Degree or Diploma in any University and to the best of my knowledge and belief, it does not contain any material previously published or written by another person except where due reference is made in the text.

_____ Date: 12 /03/2007 Signature of Candidate:

W. A. D. J. Weerakkody,Department of Computer Science and Engineering,University of Moratuwa.

University of Moratuwa, Sri Lanka. To the best of my knowledgel the above particulars are correct. Supervisor : UOM Verified Signature (t.ac.lk Dr. Ashoka Perera Department of Civil Engineering, University of Moratuwa.

ii

Abstract

Business software systems have been in use around the world for a while now and an extension of these called ERP (Enterprise Resource Planning) systems offers a process based view and cross functional integration to an organization with number of other features. Need for redesigning company's existing business practices with the implementation of ERP system result in number of challenges to the organization. The complex nature of ERP implementations has been the subject of many researches and the objective of this research is to critically analyze the application of Business Process Reengineering in ERP implementations.

Number of successful and unsuccessful ERP implementations for Sri Lankan and foreign organizations have been studied in detail in the research. These cases have been analysed based on a common framework that gives more emphasis towards handling business processes and related issues such as change management. Based on this the most important issues relate to BPR have been discussed and a set of recommendations have been derived that could be followed in ERP implementations. Ultimately an attempt has been made to arrive at a framework for successful ERP implementations.

The idea is to discuss issues that are not given very high attention, but are very important for overall success of ERP implementations. An important point that was identified in the research was that the change management was the single most important issue that has not been handled properly in ERP implementations. This has result in lot of pain for all the categories of employees and lead to unsuccessful returns from investments. Arriving at a frame work for successful ERP implementations that is universally applicable is almost impossible due to the complex nature of ERP implementations. Therefore the objective of the framework prepared in this research is to highlight the most important aspects that would affect the success or failure of the implementations. These aspects need to be given high attention to make the implementation an effective one.



Acknowledgement

First of all, I would like to devote my sincere thanks to my project supervisor Dr. Ashoka Perera for the assistance as well as the encouragement and guidance given in various difficult situations of the project. I would also like to thank all other staff members of the University of Moratuwa including Ms. Vishaka Nanayakkara, Head, Department of computer Science & Engineering, Dr. Chathura De Dilva, MBA Course Director and senior lecturer of department of Computer Science & Engineering for the guidance given in various stages in this project.

I should also highlight the support given by Mr. Nirusha Dissanayake, SAP Manager, Dialog Telekom, Mr. Ramesh Nanayakkara, Plant Engineer, Coca Cola, Mr. Roshan Fernando, IT Manager, Holcim and ERP consultants who provided me valuable ideas. I sincerely thank them all.

Last, but not least, my sincere thanks should go to all my family members whose support and patience in various situations helped me lot in this effort i Lanka.

Dharshana Weerakkody Www.lib.mrt.ac.lk December 2006.

Table of Contents

6

.

| ABSTRAC | ΤΙ | Π | |
|-------------------|--|-----|--|
| ACKNOW | LEDGEMENTI | V | |
| TABLE OF CONTENTS | | | |
| LIST OF F | UGURES V | Π | |
| LIST OF T | ABLES V | ΊΙ | |
| LIST OF A | BBREVIATIONS V | 11 | |
| I. INTR | RODUCTION | . 1 | |
| 1.1 | BACKGROUND | . 1 | |
| 1.11 | | . 1 | |
| 1.1.2 | Business processes and process reengineering | . 2 | |
| 1.1.3 | | | |
| 1.2 | OBJECTIVES | | |
| 1.3 | METHOD OF STUDY | . 5 | |
| 2. LITE | RATURE REVIEW | .7 | |
| 2.1 | EVOLUTION OF ERP | . 8 | |
| 2.2 | WHY IMPLEMENT ERP? | | |
| 2.3 | WHY ERP IMPLEMENTATIONS FAIL? | . 9 | |
| 2.4 | BUSINESS PROCESSES | 10 | |
| 2.5 | INDUSTRY BEST PRACTICES | | |
| 2.6 | BUSINESS PROCESS REENGINEERING | | |
| 2.7 | RELATIONSHIP OF BUSINESS PROCESS REFENGINEERING WITH ERP | | |
| 2.8 | TOWARDS A THEORY OF THE EFFECTS OF ERP IMPLEMENTATION STRATEGY | 15 | |
| 2.9 | PROCESS IMPROVEMENTS THROUGH THE SCOPE OF THE ERP MODULES | | |
| 2.10 | DEFINING BUSINESS PROCESSES IN ERP IMPLEMENTATIONS | | |
| 3. RES | EARCH METHODOLOGY | | |
| 3.1 | CASE STUDY RESEARCH DESIGN | | |
| 3.2 | SELECTION OF CASES | | |
| 3.2.1 | | | |
| 3.2.2 | | | |
| 3.3 | DATA ANALYSIS | 27 | |
| 4. DAT | A COLLECTION AND ANALYSIS | 29 | |
| 4.1 | ERP Expert's views | 29 | |
| 4.1.1 | ERP implementation approaches | 29 | |
| 4.1.2 | Industry Best Practices: How these are developed | 32 | |
| 4.1.3 | Process Reengineering Vs Process Revision | 32 | |
| 4.1.4 | | 33 | |
| 4.2 | CASE ANALYSIS THROUGH PUBLISHED LITERATURE | | |
| 4.2.1 | EURMOBIL - SAP Implementation | | |
| 4.2.2 | | | |
| 4.2.3 | | 4/ | |
| 4.2.4 | | | |
| 4.2.5 4.2.6 | | | |
| 4.2.0 4.2.7 | | | |
| 4.2.7 4.2.8 | | | |
| 4.2.9 | | | |

٠

| 4.2.10 |) Rolls-Royce – SAP implementation | |
|---------|--|-----|
| 4.3 | SRI LANKA CASES | |
| 4.3.1 | Coca Cola – Sri Lanka – SAP Implementation | |
| 4.3.2 | Dialog Telekom – SAP Implementation | 88 |
| 4.3.3 | Holcim : Sri Lanka – SAP Implementation | |
| 4.3.4 | A Motor Vehicle dealer in Sri Lanka | |
| 4.4 | RE-ENGINEERING GOVERNMENT PROGRAM | |
| 4.4.1 | Program concept | |
| 4.5 | SUMMARY OF ANALYSIS | |
| 5. CON | CLUSIONS AND RECOMMENDATIONS | |
| 5.1 | CONCLUSIONS | 110 |
| 5.1.1 | Nature of the Organizations and Type of ERP solution | |
| 5.1.2 | Objective behind move to ERP | |
| 5.1.3 | Implementation Methodology and Extent of BPR | |
| 5.1.4 | Success or failure of BPR and customizations | |
| 5.1.5 | Have Organizations achieve major process improvements with ERP? | 112 |
| 5.1.6 | Ability of organizations to withstand the change | 113 |
| 5.2 | RECOMMENDATIONS | |
| 5.2.1 | Decision to implement ERP | |
| 5.2.2 | Selecting an ERP system | |
| 5.2.3 | Implementation methodology | |
| 5.2.4 | Planning and implementing process improvements and change manageme | |
| 5.2.5 | Towards a framework for successful ERP implementation | 115 |
| REFEREN | ICES | 117 |
| APPENDI | x t | 121 |
| | | |



University of Moratuwa, Sri Lanka. Electronic Theses & Dissertations www.lib.mrt.ac.lk

List of Figures

- Fig. 4.1 Cross Functional Integration
- Fig. 5.1 Project Team Structure at NAVAIR
- Fig. 5.2 Gap Analysis at NAVAIR
- Fig. 5.3 Project organizational structure at Coca Cola
- Fig. 5.4 SAP organization at Coca Cola

List of Tables

Table 4.1 Frequencies of the business process re-engineering variable

| List of Abbrevi | ations rsity of Moratuwa, Sri Land | ka. |
|-----------------|---------------------------------------|-----|
| | Electronic Theses & Dissertation | S |

| BPR: | Business Process Reengineeringk |
|---------|---|
| CSF: | Key Success Factors |
| ERP: | Enterprise Resource Planning |
| GOSL: | Government of Sri Lanka |
| ICTA: | Information and Communication Technology Agency |
| NAVAIR: | Naval Air Systems Command |
| S/W: | Soft Ware |