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## **CHANGE MANAGEMENT IN THE CONTEXT OF IT PROJECT IMPLEMENTATIONS**

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### **ABSTRACT**

This research titled Change Management in the context of IT project Implementations is focused on identifying empirical and knowledge gap between ERP implementation and change management processes through answering the research questions 'why ERP system implementation projects fail' and 'how change management practices influence ERP implementation project success?'. A case study methodology was adopted in this research to study the current ERP implementation process adopted by Sri Lankan organizations.

Keywords: IS Failures, ERP implementations, Change Management

## **1. INTRODUCTION**

Today's business organizations invest vast sums of money in IT (Information Technology) implementation projects in order to gain competitive advantage. The current organizational context indicates a wide spread adoption of ERP (Enterprise Resource Planning) systems in spite of their increasing cost in order to streamline their business processes (Dawson & Owens, 2008). However it is neither an indication of their success nor the maximum exploitation of their benefits. Past researches reveal that most of the large ERP implementation projects fail (Irani, Sharif, & Love, 2001).

Therefore it becomes increasingly important to explore on the factors that influence the success of ERP system implementations. Poor change management practices associated with ERP

implementation projects has been identified as one of the major factors behind ERP project failures (Hong & Kim, 2001; Dawson & Owens, 2008; Lau & Nah, 2001). This research focuses on exploring the role of Change Management in the context of ERP implementation projects in Sri Lankan business organizations.

The outcomes of this research would lead to increase the success rate of ERP implementation projects through effective change management. The framework developed in this research would contribute in applying change management best practices in ERP implementation process. This framework would guide in identifying the relationship between phases of change management and phases in IT project implementation and how to manage those changes to make them a success.

## 2. LITRETURE REVIEW

### 2.1. ERP SYSTEM IMPLEMENTATION PROCESS

Enterprise Resource planning is the techniques and concepts for integrated management of businesses as whole from the view point of the effective use of management resources to improve the efficiency of enterprise management. (Leon, 2008).

Past researchers have revealed that organizations adopting ERP systems gain various benefits into their organizations.

Nah et al and Umble et al in their studies have discovered that organizations have acquired benefits in improving the business processes and decreasing the costs by utilizing ERP systems (Lau & Nah, 2001; Umbl, Hft, & Umble, 2003).

Past researchers have developed several frameworks to guide the process of ERP implementation. The PPM (Project Phase Model) developed by Parr and Shanks was adopted in this research to study the ERP implementation projects. This model provides a detailed breakdown of process of ERP implementation which has also been used in previous research to examine the ERP implementation process in Sri Lanka (Parr & Shanks, 2000).

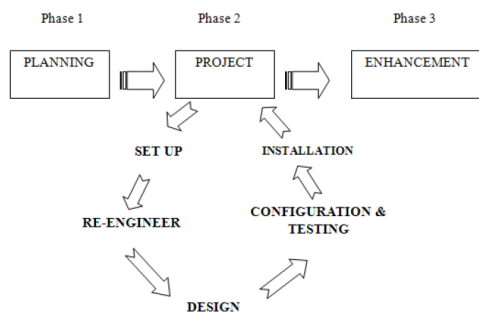


Figure 1: Project Phase Model by Parr and Shanks

#### Phase 1: Planning

Selection of an ERP

Assembly of a steering committee

Determination of high-level project scope

Broad implementation approach

Selection of a project team manager

Resource determination

#### Phase 2: Project

Set-up

Re-engineering

Design

Configuration and testing

Installation

#### Phase 3: Enhancement

System repair

Extension and transformation

(Parr & Shanks, 2000)

### 2.2. CHANGE MANAGEMENT PROCESS

Despite of the benefits expected and costs incurred a large number of ERP implementation projects fail and previous research disclose several main reasons for these failures.

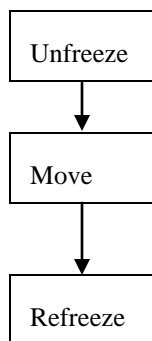
It is clearly evident from international researchers that proper change management is a key success factor in IT implementations. As mentioned in the study by Rajapakse and Seddon

major problems in adopting ERP systems in developing countries including Sri Lanka appear to be related to which processes the software should be configured to support overcoming knowledge barriers and change management (Rajapakse & Seddon, 2009).

Preliminary investigation revealed that most of the chief executives (both Information Systems and business managers) do not give the due emphasis for adopting effective change management practices during the implementation course (Umbl, Hft, & Umble, 2003).

Therefore an in depth understanding and analysis about the effect of change management practices in the implementation process is extremely important for the growth and development of Sri Lankan businesses.

Change management process introduced by Kurt Lewin was adopted in this research to study how the process influences the ERP implementation process (Elrod and Tippett, 2002).



**Figure 02: Lewin's Change Management Model**

### 3. OBJECTIVES

There have been no prior research focusing on exploring the relationship between change

management and ERP System implementations in Sri Lankan business context.

This research focuses on studying ‘what is the level of effect of change management practices in ERP implementations in Sri Lankan business organizations?’ and ‘how change management process influences ERP implementation process?’

The primary objective of this research is to identify and fill the significant gap between change management and ERP implementation processes.

The specific objectives of this research are threefold: to study the level of influence of Change Management in the process of ERP implementation, to identify how change management process influences ERP implementation process and to develop a framework to improve the ERP implementation effectiveness.

## 4. RESEARCH APPROACH

A case study strategy was adopted for this study in order to study ERP implementation and change management processes at two organizations in Sri Lanka which are operating the same ERP system implemented by the selected vendor.

According to Akkermans and Helden case study approach is well suited for IS (Information Systems) research relevant to organizational change processes (Akkermans & Helden, 2002). Cross-sectional view of the organizations was considered for the research to overcome the time

constraints faced and gather necessary information.

#### **4.1. DATA COLLECTION**

The research methods employed in this study were qualitative. Structured interviews were occupied as primary data collection procedure.

In selecting the case study organizations a non probability sampling method was followed according to judgment and convenience of the researchers (Panneerselvam, 2008).

Sampling units were selected according to judgment sampling method based on the advice of an industrial expert with 20 years of experience in ERP application implementations and 30 years in IT industry in Sri Lanka. (<http://solutions.oracle.com/partners/dmsswt>)

(Panneerselvam, 2008)

#### **4.2. CASE STUDY**

The case study methodology was followed in this research since the focus of this study is on a contemporary phenomenon within its real life context where the boundaries between context and phenomena are not clearly evident (Yin, 1994).

Multiple case study approach employed in this research selected two information-rich organizations that have adopted standardized ERP applications for the study.

A detailed case study protocol of this study was designed in line with the research objectives. It was used by the researchers as guide in data collection from case study subjects selected to represent two client organizations and a vendor organization.

#### **4.3. CASE STUDY VALIDITY**

The reliability of information elicited through interviews is guaranteed according to following reasons based on internal validation:

- Wording of questions: The respondents were interviewed on same issue unambiguously in different verbatim. The consistent responses from interviewees were accepted while the questions with inconsistent responses were rejected to ensure the validity.
- The nature of interaction: The interaction with the organizations was formal and professional which built trust on interviewers that the confidentiality of information will be ensured.
- The physical setting: The repeated interviews were conducted at the same setting, at the company boardroom which allowed the interviewees to respond freely and unbiased.
- Documentation of interviews were given to each person that had been interviewed to check and to resolve any discrepancies that may have arisen and eliminate any interviewer bias (Irani & Love, 2001, Kumar, 2009)

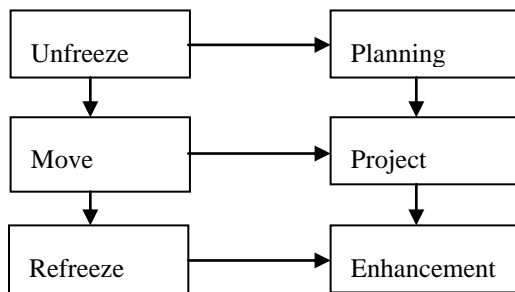
Selection of multiple organizations neutralizes the overall organizational biases.

#### **4.4. INTERVIEWS**

Interviews were conducted with the Finance manager, ICT (Information Communication and Technology) manager, ERP application

consultant, IS manager and operational level employees in finance department. The duration of each interview was approximately 45 minutes, where every interview was conducted on a “one-to-one” basis based on a semi structured interview agenda. The interviews took place in away from the normal office environment (company’s boardroom).

To eliminate biasness interviewers acted as a neutral medium which questions and answers were transmitted. To further clarify the interviewees’ answers, the interviewer did not introduce any ideas that might form part of the interviewees’ subsequent answers (Irani & Love, 2001).



**Figure 03: Theoretical Framework adopted**

## 5. CASE STUDY

### 5.1. CASE STUDY BACKGROUND

#### Case Study A

Company A is a subsidiary of a Dubai company established in Sri Lanka as a BOI flagship project, which is in the business of Wheat based flour milling with a capacity of 1000MT per day. The notion of implementing an ERP system in the Company A was transpired from the top management with the objective of “streamlining the processes”, at an early stage when the operations were yet to begin. It was implemented

according to the vision they had how the operations of the company are going to be once it starts to operate.

#### Case Study B

The case study organization, company B is a public sector organization engaged into logistics in Sri Lanka.

The finance department of the company B has faced a problem of considerable delay of about 3 to 4 months in preparing the monthly reports when the process was manual even though it occupied a large number of employees which counts to 200 in number.

Initially as a solution to overcome the delay in the process, the department has started using MS Excel spreadsheet package to complete several tasks of the process which however hasn’t solved the problem totally. Therefore to overcome the problem the top management together with the IS department of the organization has arrived at a decision to implement a computer system with the primary objective of speeding up the process of accounts preparation in order to get up to date information on account and bank balances and ensure the accuracy. Finally a decision has been made to call quotations for a computer system from ERP vendors.

### 5.2. CASE STUDY FINDINGS

Change management phases	Case Study A	Case Study B
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#### 1.Unfreeze

Create	The idea	The idea
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top management had an idea how to do operations Brainstorming sessions, discussions and meetings, Active participation from all levels, good relationship with vendor, planned on how to streamline the future operations, external consultancy from third party organization, consider many proposals on selecting a vendor	and IS department, strong relationship with the vendor, identify the change in job roles, identify the constraints – financial, plan the training sessions to employees to change from mainframes to personal computers, consider many proposals on selecting a vendor		participation of all the project members of vendor and client organizations	participation of all the project members of vendor and client organizations
		Re-engineer	Re-engineering the finance department, they implement ERP to streamline the process	Re-engineer the finance department
		Design	Continuous interaction between vendor and client, work done as planned by the vendor (requirement analysis)	Vendor and client worked hand-in-hand in designing, vendor formed an internal department within client organization
		Configuration and testing	User acceptance test handled	When implementing they have done user acceptance test in parallel

## 2. Project

Setup	Held kick-off sessions with the	Held kick-off sessions with the	Installation	User training,	Continuous training, use
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		the system while implementation
<b>3. Enhancement</b>	Gave training to new recruits, user training, planning for purchasing module, recruit new employees to fill the technical gap, auditing by external consultancy	Change the job roles, budget constraints, new recruits training by the internal employees of the department, decentralized system to centralized, Based on agents and suppliers' requirement change the system

**Table 02: Case study findings for ERP implementation process**

## **6. DISCUSSION AND CONCLUSION**

Change Management: case study findings and literature survey are evident for the fact that change management practices should be adopted from planning phase of the ERP project implementation through project phase and enhancement phase (Table 1: Case A and B) (Lau & Nah, 2001).

However the two case study organizations lack the awareness of change that occurs at different phases and do not forecast the changes before they occur. Therefore they are unprepared to handle the change successfully throughout the project.

Since the ERP implementations incorporate organization wide changes at different phases, the potential changes must be forecasted at an early stage and formulate a 'change preparation plan' including changes in people, culture and organization (Lau & Nah, 2001).

The relationships in the theoretical framework are defined as each phase in change management process is linked with each step in ERP implementation process in order and no continuation of relationships is noted. However the research findings show planning phase of ERP implementation process relates to the unfreeze phase of change management process and further continues to move phase since communication with external parties – vendors in planning stage of ERP implementation process is related to second stage of change management process which is moving towards the change.

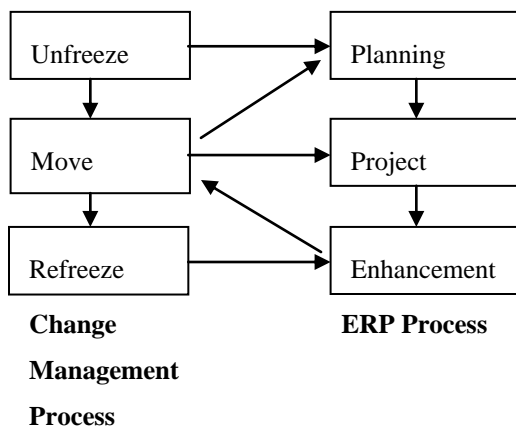
According to the ERP implementation process considered in the study user training is included in the second phase of project under installation. Although the case study findings show that user training is a continuous process throughout all three phases. This is due to the context in which the ERP system is implemented, where people lacks technical knowledge and experience (Rajapakse & Seddon, 2009).

Training given to users at the refreeze phase ensures the effective use of the system through

stabilizing the new status quo. User training at enhancement phase is to ensure that new and existing employees are familiarized to the new system and thereby continue the effective utilization of the system which leads to a conclusion that refreeze phase has a direct relationship with enhancement phase.

ERP systems are composed of modules such like finance, HRM (Human Resource Management), purchasing and manufacturing and business organizations implement modular wise. Thus the system undergoes continuous improvement and the change is also continuous. Therefore the last two phases of change management process is repeated at each enhancement and makes it a cyclic process. Since the organizational culture is prepared for the change by creating an urgency at the beginning of the implementation project the unfreeze phase need not to be repeated at each enhancement.

Following figure illustrates the relationships identified through above case study findings which deviate from the theoretical framework.



**Figure 04: Framework of how Change management process influences ERP implementation process**

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