Role of Change Management in Information System Implementations: Case of Custom Designed Information System Implementations in Sri Lanka


Abstract – Utilising information systems (IS) projects in business organizations is extremely high. A high failure rate of IS implementations have also been reported world-wide. Previous literature emphasizes poor Change Management (CM) as one of the major factors behind this high failure rate. This research deals with understanding the CM perspective of IS implementation projects with the overall aim of improving their success rate. Though sufficient research has been undertaken with respect to implementations such as Enterprise Resource Planning (ERP), studies on custom designed IS implementations are quite limited. In particular, such research has not been carried out in developing countries like Sri Lanka. Hence, this research aims at gaining in-depth and comprehensive understanding of change processes associated with custom designed IS implementations in Sri Lankan business organisations.

The case study method has been used as the principle research approach of this study. A new framework for implementation of custom designed IS projects focusing on best practices are developed and validated having mapped out six different cases with four theoretical models. This framework highlights certain CM related factors such as top management support and change leader have a major influence on the success rate of IS implementations. This framework can be productively used by IS practitioners in their IS project implementations and by researchers who are interested in this area as a frame of reference for future studies.

Keywords - Change management, Custom designed information systems, IS implementation success, Top management support, Change leader

I. INTRODUCTION

In this digital era, IS plays a leading role in managing business organizations. However, according to the research conducted by Standish Group, most IS implementation projects tend to result in failure or end up in partial success. This highlights that system implementations were successful only up to 24%. It also reveals that over 44% of the IS projects fail to achieve their objectives [1].

According to past research, there could be several reasons as to why there is such a high failure rate in systems implementations. These reasons are classified under four major categories as technical shortcomings, project management shortcomings, organizational and people related issues and the continuing information explosion [2]. Among these issues, CM plays a key role in success or failure of implementing projects. Therefore, this research specifically focuses on the CM perspective in IS implementations.

Gartner’s (2010) predictions on ranking of Business Priorities are shown in fig.1. It is interesting to note that CM has been identified as the number one priority for the year 2013.

Our preliminary investigations suggest that these issues related to application of CM processes in IS...
implementations may be equally applicable in Sri Lankan business organisations. It appears that there is a clear knowledge gap in the application of CM practices in system implementation projects. Thus this research focuses on bridging this knowledge gap related to the best practices in managing change in IS implementations with special reference to custom designed IS implementations.

II. LITERATURE REVIEW

All organizations attempt to keep up with the advances in new technologies in order to remain competitive in the contemporary, uncertain and dynamic business environments [3]. In general, the emphasis is to make the IT/IS implementation a success. However, what most organizations fail to achieve is the transformation from “where they are now” to “where they want to be”. In order to survive and successfully adopt the new IS, mere implementing the acquired technologies is not sufficient. It has been emphasised that the organisations have to actually manage the change. This review of literature is presented under four major areas namely information system implementations, factors affecting IT/IS project success, basics of change management and change management models.

A. Information System Implementations

As indicated earlier, studies on custom designed IS implementations are yet to be explored. There are several approaches for IS development in business organisations including System Development Life Cycle (SDLC), Prototyping, Rapid Application Model (RAD), Extreme Programming (XP), Dynamic Systems Development Model (DSDM) etc [18]. However, the literature on these IS project development and implementation has not been properly emphasised on CM practices.

B. Factors Affecting IT/IS Project Success

Consequently many researchers have derived success and failure factors in system implementations. According to Vaughan, P.J., most of those factors lie outside the boundaries of core technology; rather than the interaction between technology and the organization. The intersection of these two includes user involvement and participation, resistance, planning, commitment and risks [4]. Moreover, communication and training also play a significant role in IS project implementations [6].

Most of the IT system failures occur not due to the poor technology infrastructure, but because of ineffective processes which are being applied [5]. It is believed that incorporation of change management strategies is a critical component of effective IT system implementations. Bosco explains that open communication helps to place stakeholders in the process and decreases the resistance and the anxiety that often accompanies change [6].

In the discussion about the perception of IS designers from the United States of America (USA), Japan and Korea on success and failure factors, 18 factors were grouped together under five different headings. Those are organizational integration, communication of goals, project leader, IS designer and development techniques. According to that, IS designers from USA give more importance to communication, sharing responsibility in decision making and less importance to management and project leader. However Japanese respondents totally oppose the designers from the USA. Korean IS designers are between USA and Japan. Differences in perception of IS designers occur because of the cultural differences between these nations, which will affect the success rate of IS implementations [7]. According to Pinto and Slevin, there are 10 critical success factors in information system projects. Those are: project mission, top management support, project schedule plan, client consultation, personnel, technical tasks, client acceptance, communication, troubleshooting, monitoring and feedback [8].

Flowers defines an information system as a failure if any of these following situations occurs: (1) system does not operate as expected and its overall performance is sub-optimal;(2) implementation does not perform as originally intended or it is very user-hostile; (3) cost of the development exceeds any benefits the system may bring;(4) IS development is abandoned before it is completed, due to problems with the management and system complexity [9]. It can be concluded that the following five factors play a major role in successful system implementations: technical factors (16%), organizational factors (20%), environmental factors (12%), human factors (32%) and project management factors (20%). Among them, organizational, human and project management factors are related with the CM practices. This illustrates that nearly 70% of the factors are related with CM aspects which show that CM has a huge impact on IS implementations. This highlights the significance of CM in system implementation projects.

C. Basics of Change Management

Charles Darwin states that “It is not the strongest species that survive, nor the most intelligent, but the ones who are most responsive to change”. In order to be responsive for change, first of all, you need to recognize the need to change and thereby the problems which will occur. This is where the concept of CM comes into play which can be defined as “a structured approach to transitioning individuals, teams, and organizations from a current state to a desired future state”.

A change can be categorized into three main categories as structural, technological and people. This research focuses on technological changes and how the people factor is affected as a result of a technological change taking place within an organization.

D. Change Management Models

Among several change management models (e.g. Kurt Lewin’s three step CM model, ADKAR model etc), this research uses four significant models, covering two aspects of change management namely ‘Process of change’ and ‘Leadership and change’.
McKinsey 7-S Model [10] and Kotter’s Eight Step Change Model [11]-[12] cover the ‘Process of change’ and the other segment which is ‘Leadership and change’ is discussed using Kouzes and Posner’s Model in Transformational Leadership [13] and Leadership – Change model given by Theofiliakou, A. [14]. Due to space limitations, the specific details of these models are not presented in this paper.

III. METHODOLOGY

This research adopts the qualitative approach using exploratory case study approach. This is justifiable since the research aims at examining how and why questions rather than what questions. Case study method is also highly recommended for studying contemporary phenomena. The target population is custom designed IS/IT implementations in Sri Lankan business organisations.

Although these implementations may fall under a wide range in size and complexity, we focused on six IS implementations in business organisations with similar characteristics.

By analysing six different custom designed system implementations in the industry, using four change management models covering two major areas of change management to gain in-depth and comprehensive understanding of change processes associated with IS implementations in Sri Lanka, a new framework for the Sri Lankan context was developed and its validity was ascertained by checking the new framework with academics and practitioners in the industry. Fig. 2 gives an overview of this research process.

![Fig. 2. Research Process Overview](image)

IV. DISCUSSION OF CASE STUDY FINDINGS AND FRAMEWORK DEVELOPMENT

The study of the selected cases highlighted that the identified conceptual frameworks cannot be applied as they are in the Sri Lankan context. Some of the factors in the selected frameworks were seen in practice but it is not in operation in an organized manner.

It also highlighted that CM is an important concept and that CM concept is in use ‘unknowingly’ in the Sri Lankan context as there were no designated roles played within the organizations. Moreover, the Change Managers role played by the change leader in the Sri Lankan context reinforces the statement that CM concept is in use ‘unknowingly’ in the Sri Lankan context.

A. Framework Development

The case study data was mapped with the four conceptual models indicated in section D of literature review. The significant and the contributing factors for the success of IS implementations of the selected cases were identified and then were checked against previous literature to see whether these have been recognized as contributing factors in successful IS implementations.

In some situations, the identified factors were not listed as contributing factors by the previous researchers. These are considered as new knowledge which may be more applicable and unique to the Sri Lankan context.

B. Discussion of the Proposed CM Framework for Custom Designed IS Implementation

A new framework consisting of five major factors for successful system implementations was developed for the Sri Lankan context by identifying the best practices. This proposed CM framework for custom designed IS implementation is shown in fig.3.

![Fig. 3. Proposed CM framework for custom designed IS implementations](image)

Top management support is the first key factor in ensuring a successful system implementation. For the purpose of this research’s classification, top management support refers to the nature and the amount of support the project leader can expect from the top management including their continuous participation in the change project. Moreover, it is recommended that, the top management should convey the change idea to the end users whenever possible, as it gives the employees a sense of belonging and the feeling that they all matter.

Support by the family culture plays an important role in successful system implementations that can be seen in the Sri Lankan context. This results in ‘top management
support’ and in ‘culture’ factors being mutual counterparts.

Leader is another key factor which contributes to successful IS implementation. This factor is further elaborated under nine sub factors.

Process Owner: The need for the change leader to be the process owner makes him well aware of his domain who has the ultimate responsibility for the performance of the process and also has the authority and the ability to make necessary changes [15]. As a result, if the change leader is also the process owner, there would not be any conflict of interests between the parties and would ensure a smooth run in achieving the ultimate goals of the change project.

Authoritative Leadership Style: An authoritative leader mobilizes a team towards a common vision and focuses on end goals. This coupled with the fact that Sri Lankans being more responsive to team work approach makes this leadership style ideal for a leader to adopt in the Sri Lankan context.

Change Manager Role played by the leader: Change Manager focuses on people, where changes take place in business processes, job roles, organizational structure etc. As seen in the Sri Lankan context, most organisations do not have a specific role called ‘Change Manager’ and this is played by the change leader himself. So to ensure a successful IS implementation, it is crucial for the leader to play the Change Manager role without having it as a separate role.

Intimacy: This is a contributing factor which may be unique to the Sri Lankan context. This has been brought in through the family culture, with the use of words like ‘Putha’ when addressing employees which speaks directly to the heart of the employees eliminating the difference in hierarchy allowing them to obtain the exact inputs necessary for the change.

Authority: This refers to the delegation of power and authority to the leader to take relevant decisions related to the change happening. This is classified into two categories as ‘fully decentralized’ and ‘partially decentralized’ decision making.

It was evident that when the decision making was ‘fully decentralized’, the changes take place in a fast track as the leader has full control and authority over the change happening. When it is ‘partially decentralized’, they get stuck at a point till a decision is taken by the top management and it is routed back to the leader which results in a delay as it causes a ‘bottleneck situation’. Therefore, it is important that the change leader should be given adequate power and the authority to take necessary decisions related to the change happening in an organization to ensure that the change is progressing smoothly, efficiently and effectively.

Long Standing Employment: For this research’s classification, this is referred to the experience and the knowledge that an employee receives followed by the respect and the recognition through the long standing employment and is not looking at its financial aspects. Once again this may be unique to the Sri Lankan context and it is better to consider the employment period of the employee when selecting a leader as longer the employment period, the higher the experience, knowledge, respect and the recognition received.

Respect: The selected project leader should be a well-respected person and should be well accepted within their community.

This is once again may be unique to the Sri Lankan context and a crucial factor that affects the leadership.

Holds a High Position: It is believed that the project leader should be in a high position in order to guide the change project and its team through the change process. This allows the project leader to overcome some of the natural resistance coming from the employees due to his ‘legitimate power’ available through his high position in the organization.

Experience: An experienced person is referred to as one who has experience in handling projects (leading them) and the experience of that person in the specified project subject in this research’s classification. It was observed that coupling the above mentioned could double the success of a project.

Communication is the next factor identified in the new framework which is further elaborated under;

Vision: This vision for the change, as witnessed in the Sri Lankan context, is in the mind of the top management and is usually passed down verbally to the relevant people next in the organizational hierarchy. After the change leader is appointed, he is kept in the loop while the unwritten vision is communicated to the service provider mentioning their requirements. From there on, the change leader takes initiative to communicate this vision for change to the rest of the employees by appointing change agents and get it out via them. The researchers clearly revealed that communication of this unwritten vision is very crucial to all the affecting and affected parties in successful IS implementation as it reduces the resistance coming from the employees due to the fear of the unknown and selective information processing.

Objectives: Case study data highlights that what is important is communicating the objectives to other stakeholders rather than having a documented set of objectives. It was observed that in partially successful cases, although there were written objectives they were not being communicated successfully to the respective parties. However, the researchers recommend that objectives need to be in writing as it would help the project team to manage the scope of the project without giving into ‘scope creeping’. This also enables the project team to communicate the set of objectives effectively, allowing to track them easily which increases the probability of success in the system implementation.
Training: It is recommended that organizations adopt the ‘Train the trainee method’ when providing training because it costs less as there is no need to hire specialists every time when there is a training session, boost the morale of the employees who act as trainers; it makes the employees feel that they matter and create a sense of belonging that results in employees trying to do their best. All these together contribute positively to a successful IS implementation.

Requirements Gathering through active end-user involvement: It is very important that the needs of these existing and future end users are identified and met at the same time.

In order to achieve that, the affecting and the affected end users need to participate actively in the change process.

Feedback Gathering from end-users: An IS implementation is considered a failure if it is not accepted and used by the end users.

Obtaining feedback from end users after the system is implemented is also as important as it is to obtain feedback from the end users during the implementation process.

If feedback is obtained from them, it allows to clarify whether the end users have any issues with the new system; it helps to identify whether it is the exact IS solution that they wanted.

Therefore, the researchers believe that collecting feedback from the end users after the system implementation helps to determine whether the system was a success or a failure and it could also be used to reshape the system implementation if required by any chance.

Culture is another significant factor which represents the new framework. It is something that is not clear; very difficult to capture and define [16]. Fundamentally, culture is “the way we do things around here” [17].

Current Sri Lankan socio economic environment is unique and it has a different culture when compared with other developing and developed countries.

It was identified that the intimacy between the leader and the employees involved in a change, is brought out through the family values and also with the use of words such as ‘Putha’ which were visible in some of the selected cases. This once again could be backed by the fact that the Sri Lankans being inherently respectful to the elders and listen to them which could be unique to the Sri Lankan context highlighting its cultural aspect.

However, this is not visible in all the selected cases and therefore the researchers believe that the relevance or the applicability of this cultural aspect may vary from organization to organization which could depend on the organizational environment, the attitudes of the employees etc.

These evidences prove that culture is an important factor that needs to be considered when an IS implementation takes place and therefore, understanding the culture of the organization prior to a system implementation is a crucial factor which could smoothen the IS implementation.

Project team structure is the final factor which fulfils the new framework. The general consensus among practitioners proves that each affected unit must at least be considered [4].

This is mainly because the requirements have to be gathered from all the affected parties (end users). Moreover if there is one or two process specialists in the project team representing each unit or department, they can direct the project team in the right direction which helps them to implement the new system successfully.

Furthermore, as a practice, the project leader usually try to include troublemakers (i.e. who are against the new system implementation) into the project team with the intention of perfecting the new system implementation with the criticisms coming from those troublemakers and also to get their opinion towards this new system. It is to the project leader’s belief that if the troublemakers can be bought in, the rest of the employees will fall in line automatically which will reduce the resistance coming from the employees.

Moreover, having some of the steering committee members and a vendor team within this project team structure could really get this change moving forward smoothly.

Therefore, it is believed that having these identified parties within the project team could lead to a successful IS implementation.

V. CONCLUSIONS

A new framework for successful system implementations has been developed keeping the Sri Lankan context in mind by identifying the best practices adopted in custom designed IS implementation projects.

The validity of this new framework was ascertained through discussions with industry experts in order to assure a high success rate in IS implementations. This framework consists of five major factors namely change leader, top management support, project team structure, culture and communication. These have been identified as significant and contributing factors for a successful IS implementation.

The three sets of factors ‘top management support’ and ‘communication’, ‘change leader’ and ‘culture’ and ‘top management support’ and ‘culture’ are closely interrelated. Moreover, the sub factors identified under change leader factor could also be mutually inclusive depending on the situation.

Furthermore, this new framework highlights the two factors (i.e. change leader and the top management support) as they play a key role in implementing a successful custom designed IS in Sri Lanka. The IS practitioners can use this framework making appropriate adjustments to the respective factors to increase the success rate of the custom designed IS implementations.

REFERENCES


