Changing Management in Enterprise Resource Planning Implementation

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Abstract— Enterprise Resource Planning (ERP) system is an advanced manufacturing system that enables the integration of transactions-oriented data and business functions throughout an enterprise. For many years, applications’ programs used in information systems were presented separately and didn’t have relation together. Small companies interested in such software and were fulfilled their needs easily by the application. But after a while, starting with time processes and process re-engineering business in organizations, feel to need different types of information systems and producing integrated software information systems is began that can utilize different areas software, including accounting, manufacturing, sales and warehouse. Produce such software, offering new approaches, including architecture based on client / server and also integration software seemed necessary. This paper attempts to present the change management strategies for successful enterprise resource planning implementation and also discuss the behavioral approach.

Keywords— Changing Management, Enterprise Resource Planning (ERP) Implementation, Global Information System (GIS)

I. INTRODUCTION

ENTERPRISE Resource Planning systems consist of a coherent set of programs are used to support the main activities such as production, finance and accounting, sales and marketing and human resources. ERP systems in different parts of the organs helps distribution of knowledge, information sharing, reduce costs and improve management of business processes [2][7]. Enterprise Resource Planning (ERP) plays an important role in today’s enterprise management and is beginning to be the backbone of organizations. Enterprise Resource Planning (ERP) is an industry term for the broad set of activities supported by multi-module application software that help a manufacturer or other business manage the important parts of its business, including product planning, parts purchasing, maintaining inventories, interacting with suppliers, providing customer service, and tracking orders [1].

Many benefits have been mentioned by researchers and practitioners. ERP systems can potentially allow a company to manage its business better with potential benefits of improved process flow, better data analysis, higher quality data for decision making, reduced inventories, improved coordination throughout the supply chain, and better customer service. ERP can also include application modules for the finance and human resources aspects of a business. Experience has shown that the main factor of failure in this project implementation is users’ employees of software in different companies sectors. The implementation of change management is one of the major issues in the management which is able to stop the process failure. This paper is going to introduce change management strategies for successful ERP implementation and will discuss the behavioral approach. Despite the ERP system has advantages; many of the ERP systems used in different companies have failed or have been faced with operational problems because of employee resistance in many ERP systems. Almashary and Zaiery [9] claimed that ERP implementation requires the creation of effective capabilities that the use of the development management strategies is important to improve implementation of ERP in organizations.

II. ERP IMPLEMENTATION STRATEGIES

A quick look at ERP literature shows that different strategies are used for successful ERP implementation that these strategies can be categorized in three groups:

A. Organizational Strategies
Organizational strategies are used for improving successful ERP implementation, include: establish and improve the changing strategy, change management techniques, project management, structure and resources, management styles and ideologies [3].

B. Technical Strategy
Technical strategies for success ERP that are considered include: technical aspects of installing ERP, ERP complexity and implementation time and cost ERP.

C. Human Strategies
Samples related to human strategies including: attitudes and perspectives of managers and staff, training participation.
A critical success factor (CSF) is something that organizations must address well to gain succeed. In terms of information system (IS) projects, CSF is what a system must do to accomplish what it was designed to do. Elmeziane, K, et al. [1] introduced the critical success factors in an organized and adequate set in order to have a better understanding and a clearer picture of the factors that are considered to be critical for successful ERP accomplishment. These CSFs are described in the following.

Teamwork and Composition: The ERP team should engage of the best people in the organization [4]. Although the success of projects is related to the skills, knowledge, abilities and experiences of the project manager, it also depends on the proper selection of the right team members [8].

Top Management Support: According to [10] top management support in ERP implementation has two main aspects,

(a) Providing leadership
(b) Providing the necessary resources

Business Process Re-engineering: Hammer et al [11] defined Business Process Reengineering (BPR) as “the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed”. Furthermore, Somers et al [12] declared that BPR plays an important role in the early stages of implementation.

Effective Project Management: ERP systems implementation is a set of complex activities, involving all business functions and often requiring between one and two years of effort, thus companies should have an effective project management strategy to control the implementation process, avoiding overrun of budget and ensuring the implementation within schedule [1].

User Involvement: It refers to contribution of the user in the process of ERP implementation. The functions of the ERP system rely on the user to use the system after going live [1], but the user is also a major factor in the implementation. There are two areas for user involvement [10]:

(a) User involvement in defining the company’s ERP system needs and;
(b) User participation the implementation of ERP systems.

Education and Training: User training should be emphasized, with heavy investment in training and re-skilling of developers in software design and methodology [13]. However, education and training are frequently underestimated and are given less time due to schedule pressures and less understanding of cross-functional business process is often reported [1]. Educating and training users to use ERP is significant because ERP is not easy to use even with good Information Technology (IT) skills [15]. Nah et al [14] stated that adequate training can help raise success for ERP systems. However, lack of training may lead to a failure.

Suitability of Software and Hardware: Due to the lack of professional expertise and experience on developing ERP systems in-house, many companies prefer to buy off-the-shelf systems to shorten the ERP implementation cycle. ERP packages provide generic off-the-shelf business and software solutions to customers [1].

IV. MANAGEMENT CHANGING STRATEGIES FOR IMPLEMENTING ERP

Selection appropriate strategies’ changing is considered the most fundamental factor of success or failure of development programs. Changing Strategies Aims are those techniques and practice patterns that change in the desired and determined range. In other words, these are guidelines and procedures that is implemented desired change. As mentioned before, transformation strategies can be contract based on both their scope and application of micro and macro desired. Micro Strategies are more considered to a special under system in the organization and their applications towards more changed individual and group behavior. Micro-level are used changing strategies generally in relation to four subsystems namely organizational structure, technology, function and behavior. Knowing that such subsystems usually are put the target of macro strategies.

Micro level will consider to significant changing programs that are looking for specific fields. Thus, for the organization that wants to avoid problems which may encounters during change, responding to internal customers (employees) is very important [6].

To help senior management when organizations confronting a complex organizational problem by employee resistance to the implementation of ERP, the coherent conceptual framework and orientation process is suggested that includes three stages: a formula to knowledge, implementation strategy and evaluation success.

Formula to knowledge step: The first steps in the evolution of management based on IT are, identifies, evaluate and analyze attitudes toward individual users and influential groups in changing. This analysis should answer the following questions:

- What groups and individuals are resistances against the change (implementing ERP)? What they want and need? /What are they ideas and values? /What are their interests?
- Response to the above questions is considered a good starting point in determining the causes and sources of employee resistance to the implementation of ERP systems [5].

Stage of strategy implementation: Managers can use gathering data about potential users in the previous steps to create such a strategy that can overcome the resistance in the
field of ERP system users to and are applied as fully as possible for employees to adapt.

Situation assessment stage: Monitoring and evaluation process changing management strategies is proposed for ERP implementation last component (element) framework. It is believed that containing a performance measurement system to ensure that the output getting of the business desired, as having a system monitor progress is important for ERP change management activities.

V. CONCLUSION

To adapt to today’s challenging and competitive business environment, organizations are implementing ERP systems to achieve a capability to plan and integrate enterprise-wide resources in order to shorten lead times, and to be more responsive to customer demands. This article was proposed to overcome employee resistance to change, excellent management should perform the following actions:

1. Read users’ needs and potential resistance reasons against the change;
2. Confrontation with the situation through appropriate strategies and techniques to successfully introduce ERP;
3. Assess the changing management activities.

On the economic theory of complementarily to ERP success, concluding that the project management, change management, alignment of the business and new information system, internal audit activities and consultant and planning activities are complementary factors. The impact of one factor on the success of the ERP implementation depends on or is moderated by the levels of the other factors. Evidence from the analysis, playing to the respective strengths of ERP in tandem enables a process by which organizational efficiency and flexibility can be simultaneously developed.

REFERENCES


Strong and Secure Re-Encryption Technique to Protect Data Access by Revoked Users in Cloud

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Abstract—Data owner’s stores encrypted data in the cloud to ensure security for his data in the cloud computing environment and issues decryption key to only authorized user to access the data from cloud. When user is revoked, data owner as to re-encrypt the data so that revoked user cannot access the data again. To perform this operation he will issue re-encryption command to cloud so that data in cloud gets re-encrypted. Once re-encryption is done there is a need for generation of new decryption keys to valid user, so that they can continue to access the data. In a cloud computing environment all such commands may not be received and executed by all of the cloud servers due to unreliable network communications.

To solve this problem we are proposing time-based re-encryption scheme. In this scheme automatic re-encryption of data will takes place based on the internal clock value present at the cloud server. To perform this automatic re-encryption we will make use of encryption technique called Attribute Based Encryption (ABE). ABE provides fine-grain access control and easier user revoking system.

Keywords—ABE, cloud computing, Data owner, proxy re-encryption.

I.INTRODUCTION

NORMALY Data owner’s having huge amount of data will outsource their data to third party who has large storage capacity called “cloud Service providers “ (CSP) due to problem of storage capacity , cost involved in storing data with them etc. Cloud Service Provider is a one who offers storage and computational services to data. Before outsourcing data to CSP’s the data owner must think about the security issue related to his data so he will encrypt the data before outsourcing data. To perform this encryption we can make use of encryption scheme called “Attribute Based Encryption” scheme, which provides fine-grained access control. ABE allows data to be encrypted using an access structure comprised of different attributes.

Instead of specific decryption keys for specific files, users are issued attribute keys. Users must have the necessary attributes that satisfy the access structure in order to decrypt a file. For example, a file encrypted using the access structure \(\{(\alpha_1\alpha_2)\alpha_3\}\) means that either a user with attributes \(\alpha_1\) and \(\alpha_2\), or a user with attribute \(\alpha_3\), can decrypt the file.

When an encrypted data is stored and decryption key is allocated to user they can access data from cloud but what is the case when particular user is revoked? When a user is revoked and he has decryption key he can access data still, so to overcome from this problem there is a need of immediate re-encryption of data by data owner. As soon as re-encryption is done the newly generated decryption keys are distributed to authorized users. This solution will lead to a performance bottleneck, especially when there are frequent user revocations.

An alternative solution is to apply the proxy re-encryption (PRE) technique [6], [7]. This approach takes advantage of the abundant resources in a cloud by delegating the cloud to re-encrypt data [8], [9]. This approach is also called command-driven re-encryption scheme, where cloud servers execute re-encryption while receiving commands from the data owner. However, command-driven re-encryption schemes do not consider the underlying system architecture of the cloud environment. A cloud is essentially a large scale distributed system where a data owner’s data is replicated over multiple servers for high availability. As a distributed system, the cloud will experience failures common to such systems, such as server crashes and network outages. As a result, re-encryption commands sent by the data owner may not propagate to all of the servers in a timely fashion, thus creating security risks.

Fig 1: Typical Cloud Environment

Let us consider a cloud environment shown in Fig. 1, where the data owner’s data is stored on cloud servers \(CS_1, CS_2, CS_3,\) and \(CS_4\). Assume that the data owner issues to \(CS_4\) a re-