

Interpreting Stakeholder Roles in ERP Implementation Projects: a Case Study

Smiju Sudevan¹, Prof.M.Bhasi², Prof.K.V.Pramod³

^{1,3}*Department of Computer Applications,
Cochin University of Science and Technology
Kochi-22, Kerala, India*

²*School of Management Studies,
Cochin University of Science and Technology
Kochi-22, Kerala, India*

Abstract— The implementation stage is usually a very critical step during the introduction of ERP systems. Although having many commonalities with other IS projects, ERP implementation projects differ in many ways from other projects by being so comprehensive from the organizational point of view. ERP implementation is a difficult and complex decision, system implementation doesn't mean installing software it is much more than a technology adoption. Rather it involves people issues more than technological issues. Research indicates that people issues are more to blame for the unsuccessful efforts of ERP implementations(11). In this paper, identifying stakeholders is emphasized as a key definitive step during the process of ERP implementation and if done improperly, will lead to failure of the implementation project. The impact of stakeholder's interests on the project's decisions was already highlighted as a critical issue in success of the ERP implementation(2). Consequently the aim of this study has been set to explore the way stakeholders influence on project's decision processes. Accordingly, a qualitative research designed and through conducting a number of semi structured interviews with project stakeholders including project manager, selected project teams, functional managers, steering committee's member, and managing director, a certain amount of data on project's decisions processes were gathered. Furthermore, the related project documents, including meeting memos, project charters and some technical reports were studied. It is seen that there is a fluidity between the stakeholder roles in each stage of implementation and accordingly, it is imperative that the stakeholder issues must be communicated or addressed throughout the lifecycle, not only in the initial stages.

Keywords— ERP implementation, Stakeholder, Stakeholder Identification, Stakeholder roles.

I. INTRODUCTION

Today's business operates in a rival and competitive environment. The exponential growth and advancement in IT is a significant factor that influence today's business environment. This of course, has made a rival competition among organizations. Therefore, if organizations wish to remain successful and to be competitive, managers need to employ technologies for the benefit of their organizations. This in turn helps organizations improve information flow, reduce costs and streamline business, offer product variety, establish linkage with suppliers and reduce response time to customer needs and expectations (1,2). Organizations may be composed of different dispersed units that require integration. Therefore, managers can focus on ICT

(information and communication technologies) to integrate information and communication across units of an organization. Currently, a popular approach to the development of an integrated enterprise-wide system is the implementation of an ERP system (11). ERP systems are complex and comprehensive software packages designed to integrate business processes and functions (3,8). Despite the difficulties and risk involved in their adoption, their use is expanding rapidly. Many organisations are adopting ERP systems for different reasons, including legacy systems replacement, cost reductions and faster information transactions (6). They have set their mark in the information technology frontier and have enticed the interest of the global business community projects. As ERP implementation is usually complex, it is not uncommon that many organizations do allocate significant resources to this phase of the project. In today's turbulent business environment ERP systems are considered as a license to play in the market and a pre-requisite to achieve operational excellence. On the other hand there is consensus that ERP implementation projects could be one of the single major projects an organisation undertakes with all that it encompasses. As a consequence, implementation processes and success factors have been one of the major concerns in industry, further exacerbated by the numerous failed endeavours and in a minority of cases fatal disasters. Therefore, despite the benefits that can be accrued from successful ERP system implementation, there is a lot of evidence of failure in projects related to ERP implementations. ERP implementations get involved with organizational change (12) therefore a great deal of risks is expected while a company begins to implement an off-the-peg ERP solution. A majority of these risks stem from the ERP project stakeholders reaction, because ERP implementation impacts the interest of stakeholders (8). Stakeholders, according to their power, influence on project decision-making processes and change the direction of implementation. Since ERP implementation projects engage different parts of the organization so a variety of stakeholders with different requirements are expected. Furthermore, often stakeholders influence on ERP implementation through their networks, in that way the action and interaction between stakeholders and their relationships with other external people and organizations make the ERP implementation environment much

complex. A majority of ERP implementation methodologies (like ASAP: Accelerated SAP) designs different processes for identifying stakeholders and controlling their influences on the ERP implementation (16). The aim of this research is to underline the importance of stakeholder identification techniques in ERP project success. In order to achieve this aim, a case study was conducted and the effect of effective stakeholder identification methods on ERP implementation decisions are studied.

II. ENTERPRISE RESOURCE SOLUTION IMPLEMENTATION

ERP systems are business software tools that allow companies to automate business processes, share data and solutions across the enterprise, and produce and access real time information. That is, the main objective is to integrate all departments and functional information flows across an enterprise onto a single computer system that serves all of the company's needs (17). Frequently, ERP implementation projects tend to put technical issues at the centre of attention overlooking other non-technical issues. Davenport and Brooks (2004) when referring to enterprise systems installation, made it clear that the technical issues, although complex, are only a small part of the complexity concerned with behavioural change. The redistribution of roles and responsibilities among members can obliterate an organisation if reprehensibly managed. Notwithstanding the extensive implementation experience acquired, ERP implementations continue to be laden with complications. Estimates produced by (2) indicated that many such projects are delivered substantially late and over budget, fail to achieve intended benefits, and deliver less than what is expected. Over the years, many private and public enterprises endured significant losses after either prematurely terminating their ERP projects or entirely ceasing the use of ERP systems post implementation. Since many implementations, costing millions of dollars have failed to bring the intended benefits there is a need to conduct research on which factors influence the implementation process (23,24). However, it is noteworthy to mention that more than half of the issues in such events are of non-technical nature. Poor change management, lack of top management support and inability to align business processes accordingly have all been cited as failure factors. Finally these failure chronicles should serve as indicators of what not to do and be considered as valuable experiences by other organisations. ERP implementations are not just technical artefacts that are installed into the enterprise. ERPs necessitate organisational transformation that will affect the enterprise holistically. Apart from the difficulties that are synonymous with such changes, it is important to keep in mind that organisations are social structures made up of stakeholders whose interests converge or diverge depending on roles, values or situations. This complicates the matter even further. Undoubtedly, stakeholders are important in view of the massive changes required. When stakeholders comprehend the proposed long-term benefits, related to an ERP implementation, acceptances of transient set-backs are more easily consented. A common malady, that should not be allowed to settle in, is to become

complacent with the status-quo. Such mindsets are largely prevalent in enterprises with dominant ICT departments that might radiate the sentiment that in-place legacy systems will meet the enterprise needs better.

III. STAKEHOLDER ROLE IN ERP PROJECTS

Stakeholders are individuals or groups of people within an organization who have a vested interest in an ERP implementation software project's outcome and/or whose support is required to launch such a project, drive it forward to a successful conclusion and ensure that the product is utilized to its fullest extent (7). Short term support for or having a silent participation in an ERP software implementation project is insufficient. Avoiding responsibility for the outcome of a software selection project invites failure. Stakeholders have the power to drive a project to failure just as much as they have the power to drive a project to success. Every person who will have any relationship with the new ERP software system is a stakeholder and therefore must participate fully in the project. It really doesn't matter whether they are data entry employees, line of business managers, accounting staff or executives. Each person needs something from the system and needs the system to operate in a specific way. According to (13), "Unlike other information systems, the major problems of ERP implementation are not technology related issues such as standardization, technological complexity etc (3) but mostly about organization and human related issues like resistance to change, organizational culture, project mismanagement, incompatible business processes etc." At the same time, it can be seen from the top ten risks for ERP implementation failure presented by Huang, Chang, LIN and Li (2004), at least seven of them are due to human causes namely lack of senior management commitment, ineffective communications with users leading to ineffective support from users, ineffective training of end users, conflicts between the user departments etc. ES implementations have a wide range of impacts on the stakeholders involved. As part of the development and use of ES, the roles, responsibilities and inter-relationships of stakeholders are often redefined. Organizations thus need to keep abreast of their stakeholders and their interactions, so that they can better manage them accordingly. Furthermore, considering the wide scope and impact of ES throughout the organization, they typically require input from a host of different stakeholders from within and without the organization. Hence, organizations need to know how to identify the relevant stakeholders of such ES projects and find ways to meet their various interests.

The stakeholder groups involved within this study include the following: developers, division and functional managers, top managers, external consultants, key users, project champions, project team members, vendor analysts and vendor consultants.

A. CEO/OWNER

Every business has a leader and a person who plays an important role in laying out the strategic policies of the

organisation. While the CEO/Owner is a stakeholder by virtue of the fact that they need information (and therefore must take an active role in defining what information), their role as leader is far more important. While the CEO may not participate in the project with hands on, they must approve the project, support the project and make sure every other stakeholder participates in the project fully (11). ERP software implementation projects are complex processes that can seem to drag on forever, particularly if complications or delay develop. Even if the CEO/Owner may not be involved in the intricacies of a software implementation project, their unwavering enthusiasm and support is required to make sure that other stakeholders understand the importance of the software implementation project and participate to their fullest extent. Since ERP implementation projects cause organizational changes, it requires the engagement of these individuals who is able to resolve conflicts, if they rise (12).

B. Project Manager

The Project Manager is the project's administrative manager. Their most important responsibility is the development of an understanding of how an ERP software implementation project should be organized for success (23, 25, and 26). Their most critical potential weakness is letting other stakeholders oppose or resist the project. To combat this weakness Project Managers must have some higher level report to person who has the authority to make people do what they should be doing. While other individuals are responsible for initiating the decision to switch to ERP software, it is the Project Manager who is responsible for guiding the firm through the software implementation project. They make sure that all of the detailed tasks are identified, that each task is assigned to the correct individual and that these tasks are completed on-time, on-budget and with the correct level of detail. One critical fact needs to be accepted by every single person involved in the project. The Project Manager has the full support of the CEO/Owner and has the authority to direct the actions of each person participating in the software implementation project. The project manager usually assigns a senior manager as the Project Manager's report to. This senior manager has the responsibility to keep the project on track.

Due to changes in business processes across the organization, there can be resistance to adopting the new system by the end users. Therefore it is critical that the project manager stays committed in all the phases of the project and equip and engage the stakeholders with clear channels of communication.

C. CFO/Chief Accountant

The CFO/Chief Accountant is a key stakeholder. In most cases they are responsible for initiating discussions that lead to the decision to invest in a new ERP implementation software system. The CFO/Chief Accountant is responsible for the financial management portion of the ERP accounting software system (not the operational side of the system). Their most important responsibility is developing an understanding of what's possible in terms of software

driven functionality. The CFO/Chief Accountant may also be the Project Manager in a small firm. Much like the CEO/Owner they have to be the primary enthusiast, getting people to acknowledge that change is necessary and that the outcome is worth the effort. While the CFO/Chief Accountant may be a critical stakeholder, there is a potential knowledge deficit danger that needs to be avoided. The production of financial management statements represents only about 10% of a modern ERP implementation software system's capabilities. Business Process Management, Business Intelligence and Customer Relationship Management represent the other 90%. While the Project Manager may be responsible for the day-to-day software selection tasks once a project has been launched, the CFO/Chief Accountant must be responsible for educating each person, including themselves. They should be up to date with the ERP software that is to be used for the implementation.

D. CIO/System Manager

The CIO/System Manager is a stakeholder by virtue of the fact that they are responsible for the system itself and the network that connects users to the ERP implementation software system. The CIO/System Manager may have even more of a knowledge deficit than the CFO/Chief Accountant. Certainly their knowledge with respect to the hardware/software infrastructure decision is critical, but they may not possess sufficient knowledge regarding the ERP implementation software needs of the organization. The CIO/System Manager is responsible for evaluating deployment alternatives. They should not run the ERP implementation software process. That's the responsibility of the Project Manager and the selection committee.

E. Sales and Marketing

Sales and Marketing used to be somewhat of an island unto itself, but most firms now are very aware of the potential benefits of an integrated Customer Relationship Management (CRM) system. The real question when it comes to ERP implementation software is balancing the needs of the Sales and Marketing department vs. the business management needs of the rest of the organization. Sales and Marketing must support the software implementation process, but it cannot drive the process simply because it favours one particular CRM system. That is, it is responsible for defining how the firm is going to connect with its prospects and customers. While the selection of an appropriate CRM system is critical to a firm's success, every effort should be made to select a CRM system that integrates fully with the new ERP software implementation process.

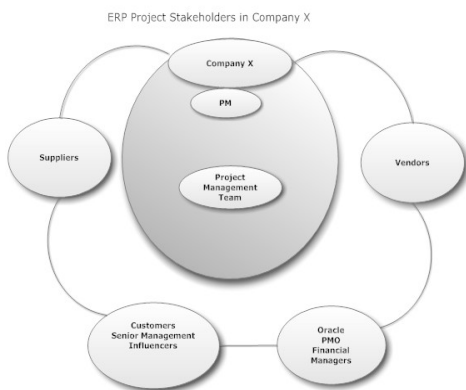
F. System Users

Given the fact that the new system might impose a different set of business processes, every effort should be made to evaluate the impact this might have on system users. An ERP accounting software system that seems to be overly complex or demanding will become a self-fulfilling prophecy unless the issue is addressed and precautions taken. The process of implementing a new ERP software

system must proceed from two different directions. The strategic needs of the organization and its executive managers must be defined and usually translated into Business Intelligence requirements. On the other hand people need to do the work and that translates into Business Process Management requirements. Customer Relationship Management comes in between these two requirements. System users don't need information per se. They need to process business transactions (purchase order, sales orders, etc.) and do so efficiently. They also need to be able to easily track business processes that are not being completed on time (track and resolve overdue purchase orders, sales orders, and overdue invoices). If this critical group of people (usually a majority of the total number of people interacting with the ERP implementation software system) is not included in the process, two outcomes are possible. It may cost, a lot more to process transactions or worse still significant resistance to the new system will be generated. These people and their needs are just as important as executives and managers who utilize the output of the ERP implementation software system.

IV. CASE STUDY

Here in this paper, we look at a company X which had completed their ERP implementation. It is a telecommunication company created in 1970 and employs over 1800 employees with an annual turnover of approximately 442 million dollars. In 2011, it decided to begin implementing an ERP system for several reasons. Some of these included: reorganizing existing business processes; the obsolescence of any existing computer-based information system; problems in software maintenance; and the desire to operate in new markets and to develop a new set of products. In 2011, it decided to begin implementing an ERP system for several reasons. Some of these included: reorganizing existing business processes; the obsolescence of any existing computer-based information system; problems in software maintenance; and the desire to operate in new markets and to develop a new set of products



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and processes with integrated real time information system. Till then Oracle was the existing system. X was faced with two decisions: either develop from a single integrated system or adopt a system from a vendor. Given the complexity of online financial system and its development cost, a decision was taken to move to a Oracle based ERP solution which provided pre-packaged standard business functions and processes based on corporate industry best practices so that the migration would be easier with no need of system change, reusability and the vendors were already known to them. The Oracle E- Business suite version 11i was bought and then customized. Simultaneous implementation of financial, supply chain and human resources were done. Implementation phase started in 2011 and though supposed to be finished by 2012, overran the initial schedule by 6 months. This was found to be because of limited oracle products trained personnel within X along with staff with adequate oracle integration expertise.



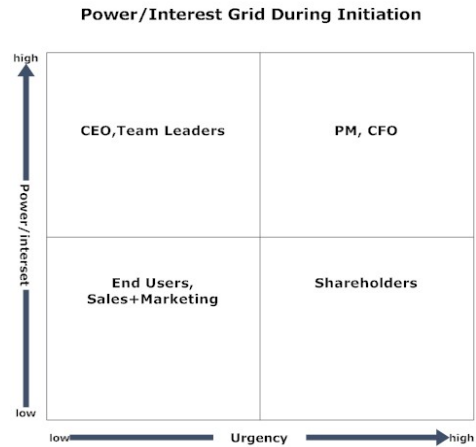
V. METHODOLOGY

The case study was done post ERP implementation. Initially, formal and informal interviews were conducted with the different stakeholders. This was followed by a questionnaire that were sent to most of the employees and the other stakeholders. Responses were analysed later on. The questionnaires were distributed in hard copy and by email to all the stakeholders. Some of the employees had left the organization post implementation. Only 43 stakeholders responded to the survey, however, they represented all stakeholder groups, which was important for this purposive sample. The question we must address is the role these people play in an ERP implementation software project. A total of 39 interviews were conducted with 12 end users, 8 ERP project team members, and 4 senior/mid-level managers at the organisation. The interviews lasted an average of 1 hour each. In addition, two consultants and three vendors were interviewed from the Oracle business suite. In each interview, relevant to the position of the interviewee, the strategic decisions and the process of decision making for each item in the project were asked. X demonstrates that to achieve success in an ERP project, enterprises need to look at several factors before, during and after software implementation. One important factor before implementation was that top managers should be clearly aware of the characteristics of an ERP and to identify the organization's real needs to decide which ERP modules to implement. Additionally, top management support and commitment were also critical to motivate users' involvement in the project. And although some problems were identified at the beginning of the implementation, the change management attitude of top managers, reinforcing that ERP use was important for the organization, was also critical to overtake these problems and reduce users' resistance to change. During the

implementation phase, it was important for X to consider the impact that the ERP project may have on users and business processes. Knowledge transfer and clarification of objectives were stressed as important factors for the success of the project. Additionally, user training and involvement in the project and the existence of ERP competencies in-house was seen as critical. After implementation, the X case study demonstrated that a closer relationship with ERP consultants was required to develop in-house competencies and to further assist in training users. The large capital investment required to introduce ERP systems means that the investment decision is based on a carefully crafted business case. The decision to invest and implement ERP has to be aligned to the strategic direction of an organisation. Given the far-reaching affects on the organisation's use of the system and its subsequent performance outcome, it is clear that the way implementation is carried out can facilitate or hinder the ultimate performance outcome — including the achievement of any competitive advantage. A successful implementation outcome could provide a necessary platform for development of differential capabilities. It was observed that after the completion of ERP training provided to the staff and within some days of the system going live, many of the trainees from the organization quit the company causing great losses to organization in the form of shortage of key resources i.e. trained staff. This was a big percentage of employee attrition rate and it is not possible for a company to hold back any of its employees even with the most stringent contract. The role of different stakeholders in the ERP implementation life cycle of Company X.

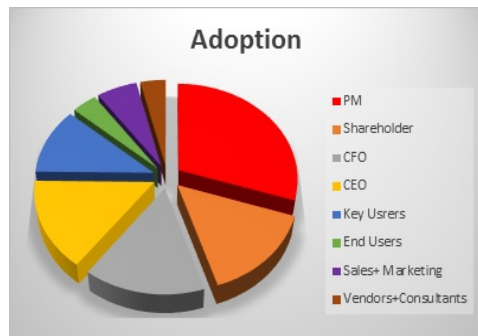
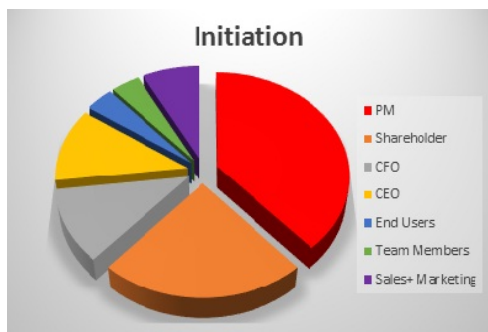
Initiation

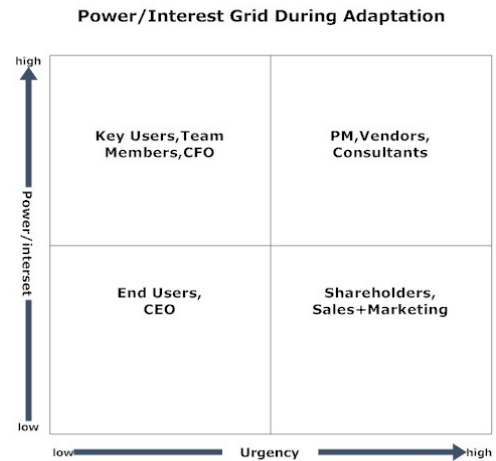
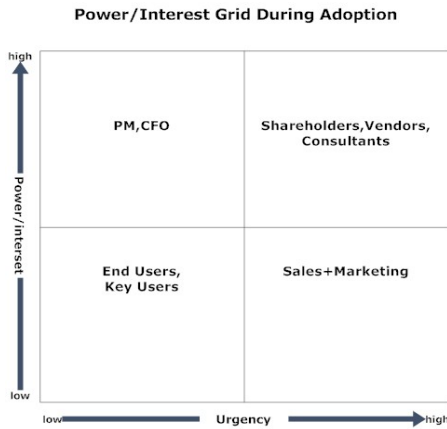
The first stage is concerned with the decision from the top management to implement the ERP solution. Which means that it is the CEO, CFO and the project managers who play a very important role. In this stage the technicalities are not likely to influence the preparation of stakeholders. Since the above company X is a public enterprise, the only relevant external factor was the national economy. For the further proceeding of the project, the company X had a very clear organizational strategy which was supported by the top management's commitment and involvement. The leadership qualities of the top management also came to the fore at this stage. The appointment of an available competent project manager who is in charge of the project is decided at this stage.



Adoption

The objective of this stage is the selection of the most appropriate ERP solutions, in this case being Oracle ebusiness suite. This is a very important stage that involves many stakeholder activities such as: appointment of consultants, requirement analysis which encompasses business and technical support and training requirements. Here the documentation of the present processes and development of the future business processes, reengineering the business processes and starting the change management programme, production of the request for proposal evaluation of the tenders; selection of the ERP solution. Therefore, this stage needs the support and commitment of all the classes of the stakeholders. Effective communication strategies are thus very important to be developed at this stage so that there is effective communication between all. Senior managers and project managers here have to impress upon all the other stakeholders especially the project team members and customers regarding the need for the erp implementation and how they intent on doing it. Company X started the step of stakeholder identification at this stage by using the stakeholder registry made in the initiation stage. Daily meetings were held with all the internal stakeholders associated with the project. It should be also noted that the role of external stakeholder, the vendors were important in this stage. Discussions were held with the vendors and they were made part of the steering committee. Effective communication methods like email, face to face, telephonic, videoconferencing etc.



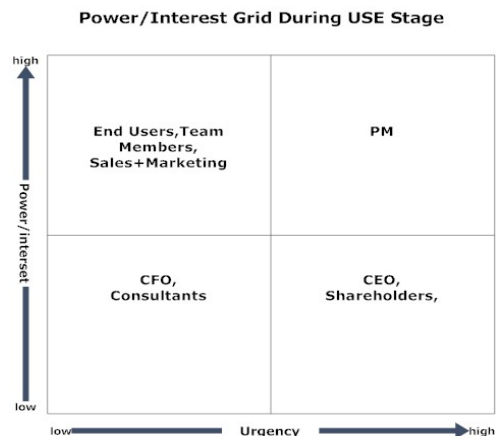
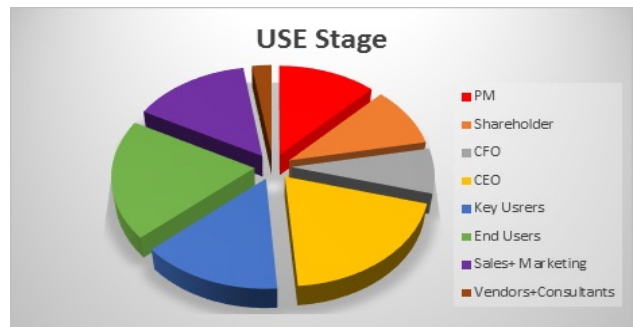
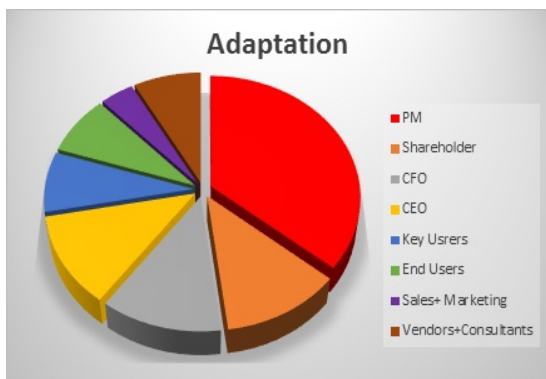


Adaptation

The adaptation stage focuses on reengineering the current business processes, producing the new business processes blueprint and making the ERP operable for the organisation. This stage’s activities are typically carried out by organizational stakeholders, the consultant and the vendors with implementers. The major activities of the stage included confirming the future business processes and producing the blueprint, configuring as well as customizing the solution, implementing business process reengineering and change management programmes. There is increased involvement of project teams and key users in the adaptation stage. Here, the project manager and team members play a major role in the configuration and customization of the system at this stage by providing guidelines to the implementer about business processes and workflows. End users have minimal role in this stage also. Company X recognized the importance of this stage and effective communication were set up between the erp consultants, implementers and the in house staff. This stage took the longest time since there were a deficiency of adequately trained staff and slight resistance faced by their negative attitude. The attitude of the end users are also required to be analysed at this stage. Faced with the task of maintaining trust and collaboration between the different stakeholders, the project manager had a key role in doing so. Interestingly, the top management mainly the shareholders and CEO were appraised of the proceedings but had no other major role.

USE stage

In the use stage, the system becomes operational. The main activities of the use stage are installing the solution in the live environment, providing access to the users using the system and providing the post implementation support. In the case of company X, at this stage there was a general agreement between the stakeholders. Effective communication at this stage was more limited to the end users and team members than the other stakeholders. Importance of end users competence, beliefs and attitudes at this stage was agreed upon by all the other stakeholders since most of the latter had to likely use the system in addition to the end users, for example the senior managers for decision making and authorising financial commitments.



VI. CONCLUSION

As organizations grow in terms of size or revenue, the complexity of their business processes tends to grow as well. One of the most significant issues many system users have to face when upgrading to a more powerful or comprehensive ERP software implementation process is that the vendor may have created a set of software driven business processes that differ significantly from the firm's current business processes (26). If the Business Intelligence and Customer Relationship Management needs of the firm can be met by the new ERP software system, but it imposes a completely different set of businesses processes on system users, this can invite resistance that can literally drag down the new system (27). There is no easy resolution, but awareness of this potential issue and inclusion of system users in the software selection process is a required first step. In the end every person who has any connection with an organization's ERP implementation software process is a stakeholder. As such they all have the potential to significantly impact the ERP software implementation process as well as the utilization of the system once it has been fully implemented. In order to best implement ERP projects, it is imperative that project members be chosen where there is a balance between members with experience and external experts with ERP specialities (26, 27). Most of employees are with lack of knowledge and practice in business domain they are hired for. Since ERP project is usually very complex, change management can play significant role to improve employees to understand why the project has been implemented and to make organizational changes and BPR easier. These activities can be summed into 3 basic ones: education of employees, communication among stakeholders and involvement in project process. Lack of change management can affect quality of project implementation, and make results smaller (25).

The main objective of this research is to build up the knowledge body of stakeholder applications in ERP projects. In order to ensure successful ERP implementation, it is important that stakeholder have been prepared for the project activities and its outcomes. Stakeholder's preparation needs change as the lifecycle progresses and it varies in each stage (19). In order to enhance the user's satisfaction as one of the constructs of ERP implementations, it is suggested that employees who use the ERP applications should be involved during the life cycle of ERP implementation. For example, employees should be able to select and modify the appropriate format of reports. Furthermore, since employees would need time to adapt to the change imposed by the new technology, it would be very practical to develop a training course that identifies and explains all the necessary changes that would occur to the business processes inside the organization. Moreover, although ERP systems standardize processes inside organizations, fast learners and technology-adaptive employees should have the chance to be distinguished and rewarded based on this effort. Therefore, managers should support and encourage such employees with suitable ways and procedures for incentives and rewards(9,11).

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