Masters of Business Administration

Project Quality Management
CEM-515

Toward Customer Satisfaction
SEC ERP Implementation Project

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Executive Summary

Many organizations failed to implement ERP projects and gain the potential benefits from them to justify the high investments in these systems. Many studies showed that failure in these projects is mainly attributed to the human factors rather than technological factors. Top management support, project & change management, culture, communication were the most important factors.

The methodology used in this paper is based on an extensive literature review followed by a case study. The case study would be describing a project management used in implementing an ERP system in Saudi Electricity Company.

In this paper's literature, I will show the major challenges, success factor, pitfalls and impediments in ERP implementation projects. After the literature, the case would be described, then discussed and explained in the light of what has been mentioned in the literature.

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Introduction

Many organizations nowadays are turning to ERP (Enterprise Resource Planning) systems in order to build strong capabilities, improve performance, undertake better

decision making and achieve a competitive advantage. ERP systems represent a major investment. Companies invested between $50,000 to hundreds of millions of dollars using a variety of justifications [Sumner, Mary. 2005]. According to one study, ERP market may reach $1 trillion by 2010 [Bingi, Sharma, and Godla, 1999].

ERP systems implementation markedly represents an opportunity to reengineer business process and introduce change since it influences entire organization. Therefore, unsurprisingly, high failure rates in implementing ERP systems have been widely reported. Although some of these problems arise from technical aspects of the system, the majority of these problems and failures result from management, social and organizational change issues [Fiona Fui-Hoon Nah 2003]. Based on the literature reviewed, top management support along with project and change management appeared most in the articles that talk about the critical success factors for ERP implementation. One study administered to Chief Information Officers of Fortune 1000 companies showed that the top five critical success factors of ERP implementation projects were as follows:

- Top management support
- Project Champion
- Team work
- Project management
- Change management program and culture

[Fiona, Kathryn, Janet Lee 2003]

According to Deloitte Consulting, an ERP system is a packaged business software system that allows a company to automate and integrate the majority of its business processes, share common data and practices across the enterprise, and produce and access information in a real time environment [Sumner, Mary. 2005].

SEC (Saudi Electricity Company) is currently moving in the process of implementing an ERP system company wide to cover all business lines' (HR, Finance, Distribution and customer service, and Logistics) processes and procedures. The aim of the program is to re-engineer current business process using the best practices embedded in the ERP system using what is called "Vanilla implementation strategy of the ERP system". In this paper, I am going to address and analyze the project from a TQM’s

principles perspectives. The goal of this paper is to demonstrate and judge the way SEC is managing the project toward achieving business strategic goals.

Research Methodology

This study adopts grounded theory research approach, and seeks to explore the role of project management in ERP implementation projects. A qualitative case study method was used along with extensive literature review for studying the subject. Literature review, observation, interviews, own experience with this case and documents related to the case being studied, were the main sources of information.

The case selected for this paper is the implementation of ERP system in the Saudi Electricity Company (SEC). This company paid great attention to the major mistakes other companies fall in when implementing ERP systems, to avoid falling in the same mistakes. Also, great attention has been made to the issue of project and change management.

Business Benefits of ERP Systems

From an overall business stand point, an ERP system achieves a number of important objectives, including maximizing throughput of information, maximizing response time to customers, pushing decision making down to the lowest appropriate level, and providing timely information to decision makers. [Sumner, Mary. 2005]

What motivates companies toward ERP Systems?

From a business standpoint, an ERP system achieves a number of important objectives, including maximizing throughput of information, minimizing response time to customers and suppliers, pushing decision making down to the lowest appropriate level, providing timely information to decision makers, and most importantly integrating information throughout the supply chain. [Sumner, Mary. 2005]

In a surveys of motivation to implement ERP in Sweden [Olhager and Selldin, 2003] and the United States [Mabert et al., 2000], some of the major motivations include the need to replace legacy systems, the need for simplifying and standardization, the importance of gaining a competitive advantage and the need to improve interactions with suppliers and customers. See the table below. [Sumner, Mary. 2005]

Table 1: Company's Motivation to Implement ERP

Company's Motivation to Implement ERP	Swedish Average	U.S. Average
Replace legacy systems	4.11	4.00
Simplify and standardize systems	3.67	3.85
Gain strategic advantage	3.18	3.46
Improve interaction with suppliers, customers	3.16	3.55
Ease of upgrading systems	2.96	2.91
Link to global activities	2.85	3.17
Restructure company organization	2.70	2.58
Solve Y2K problem	2.48	3.08
Pressure to keep up with competitors	2.48	2.90

Scale: 1 (no important) to 5 (very important)

Business Process Re-engineering and ERP Implementation

Normally, business process reengineering is associated with ERP implementation projects where large amount of changes or reengineering should occur iteratively to take advantage of the best practices offered by the system. Organizations should be willing to accept the embedded best practices and be willing to change their business

processes according to those depicted by the system to take full advantage of the ERP system capabilities. [Fiona, Kathryn, Janet Lee 2003]

BPR is the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance. Re-engineering business process requires a number of principles to be applied. These principles include:

- Organizing around outcomes, not tasks
- Have those who use the output of the process perform the process
- Link parallel activities during the process, rather than at the end of the process
- Treat geographically dispersed resources as if centralized
- Capture information at the source
- Subsume information processing work into real work that produces the information
- Decentralized decision making to be responsive to the customer needs. This has the effect of flattening organizational layers

These principles require a decentralized decision making process which has the effect of flattening organizational layers (decreasing the need for mid-level management), speeding up decision making, empowering people at the lower levels and making decisions where the knowledge resides. (Hammer and Champy, 1993)

Successful business process re-engineering requires top management commitment, setting demanding goals, anticipating resistance, focusing on business practices (empowerment, teamwork, innovation…etc) and following up.

ERP provides an opportunity to re-design business processes. With re-engineering, business processes are simplified and business rules are improved. In addition, redesigning processes provides the foundation for new opportunities. So, re-engineering business practices around the ERP software is critical to successful implementation. (Parr and Shanks, 2000) [Sumner, Mary. 2005]

The challenge of implementing an ERP system

ERP implementation projects involve considerable time and cost. A research done by Standish Group showed that 90% of ERP projects are late or over budget.

The main challenge in implementing ERP is whether to change the organization's business processes to fit the software or whether to modify the software to fit the organization's business processes. The table below shows a comparison of re-engineering vs. customization.

	Re-engineering Approach	**Customizing Approach**
Re-engineering business process	Supports re-engineering processes to fit the software system's best practices	Re-engineering is independent of the tool being implemented
Organizational Fit	Works well with minimal organizational change, but extensive re-engineering may disrupt the organization	May disrupt the organization less because the software is designed to support current methods of work organization and structure
Evolution	Evolution depends upon vendor upgrades and enhancements to the system	Evolution can support unique user requirements
Timeliness	Software is available and ready to implement	May involve lengthy systems development activities
Cost	Implementation is cost-effective	May involve extensive cost of custom implementation
Requirements	Puts boundaries on the design; designs conform with business models and best practices	Provides greater flexibility for meeting unique requirements; not constrained by the tools's best practices
Competitiveness	Other firms have access to the same design	Don't have to sue software to which everyone in the industry has access
Fit	Requirements will be supported by and ERP system	Unique requirements may not be supported by an ERP system

Source: Enterprise Resource Planning Book, Mary Sumner, 2005.

Critical Factors in ERP Implementation

Studies of ERP implementations, reengineering and change management point to some of the areas in which critical impediments to success are likely to occur. Human resources and capabilities management, cross-functional coordination, ERP software configuration and features, systems development and project management, change

management, and organizational leadership are significant factors. [Yongbeom Kim, Zoonky Lee, Sanjay Gosain, 2005]

Cross-functional coordination

ERP implementations require coordination across different functional areas as well as with external project members. The problem of coordination is counted as one of the most important issues leading to failure of a number of ERP implementations. Cross-functional coordination may be enabled by project management structures such as a "steering committee", consisting of senior management from different corporate functions, senior project management representatives, and end users as a means of ensuring appropriate involvement. The lack of coordination can result in implementation delays and organizational conflicts, while piecemeal implementations can negate the very purpose of an integrated package. CIOs attribute problems with ERP projects to functional units frequently changing their requirements, not committing their human resources to the project teams, and not communicating enough with the project teams. [Yongbeom Kim, Zoonky Lee, Sanjay Gosain, 2005]

Firms that implemented ERP systems more successfully concentrated more on functional coordination. Since the implementation of ERP systems requires changes from different functional areas, breaking functional boundaries, the very process by which these systems are put in place requires coordination across the enterprise. This coordination often comes in the form of joint resource commitments, sharing information and working together for enterprise goals. Therefore, the process of coordination among functional units often requires significant effort that outweighs the resources needed for up-front software purchase. More successful companies seem to clearly understand the issues and put functional coordination at the top of their list. [Yongbeom Kim, Zoonky Lee, Sanjay Gosain, 2005]

Human resources and capabilities management

In the absence of in-house expertise, enterprises have turned to outside consultants to facilitate the ERP implementation process. Management of in-house and external human resources in a coordinated process is critical for success. Lack of user training and failure to completely understand how enterprise applications change business processes have been shown to be impediments to successful implementation. [Yongbeom Kim, Zoonky Lee, Sanjay Gosain, 2005]

ERP software configuration and features

ERP packages may be configured to more closely fit an enterprise's structure, business practices and workflow. Configuring the system involves making compromises and has limitations, given the adaptability of the software and the effort involved. This fine-tuning of the standard system is a key process in the implementation and requires translating business needs into appropriate parameter settings. [Yongbeom Kim, Zoonky Lee, Sanjay Gosain, 2005]

Companies that implemented ERP systems less successfully concentrated more on ERP software features and functionality. It seems that they were either overwhelmed by the extensive size and scope of the system, or did not take a new view on ERP systems, but followed the traditional system development approach, and put the system in their priority list. [Yongbeom Kim, Zoonky Lee, Sanjay Gosain, 2005]

Systems development and project management

Implementing an ERP system is a careful exercise in strategic thinking, precision planning, and negotiations with departments and divisions that requires careful selection and the appropriate project management structure and methods. Given that most customers find that at least 20% of their need functionality is missing from a typical package, systems development impediments may be critical. Further, novel combinations of hardware and software as well as a wide range of organizational, human and political issues make ERP projects inherently complex, requiring significant project management skills. [Yongbeom Kim, Zoonky Lee, Sanjay Gosain, 2005]

Change management

Effective change management is critical for implementations of technology and business process reengineering. Any IT-enabled transformation requires a comprehensive approach toward the large-scale process and system changes associated with ERP implementations. Without appropriate change management processes, enterprises may not be able to adapt to the new systems to make performance gains. [Yongbeom Kim, Zoonky Lee, Sanjay Gosain, 2005]

Organizational leadership

Organizational leadership is important in developing and promoting a vision for the enterprise's IT infrastructure and the role of the ERP system. Leaders need to keep abreast of progress and make adjustments to organizational systems and processes as necessary to shape the implementation. An organizing logic for the IT activities in line with the enterprise's strategic objectives needs to be developed and articulated. [Yongbeom Kim, Zoonky Lee, Sanjay Gosain, 2005]

Pitfalls in ERP Implementation

Lack of ownership and transference of knowledge

This happens when the company marginalizes its participation in the ERP project and retains a minor managerial responsibility for its employees in the efforts. Consequently, and with the absence of progress and performance measures, this situation lead the consultants to making decisions that, transparently and negatively, influence other major roles in the company. This clearly demonstrates how busiess process re-engineering BPR's potential can be compromised in early stages, when ownership of the effort lies in the wrong hands. [Al-Mashari, Majed and Al-Mudimigh, Abdullah, 2003]

However, best practice organizations, like Kodak and Owens Corning, have all taken a clear approach to emphasizing their ownership of their ERP projects, and to ensuring an effective transfer of knowledge and expertise. At Owens Corning, the consultants were used for two specific tasks: facilitating early process design, and training on technical aspects, especially in the SAP components and the client/server. To maximize the technical expertise of the consultants, and build new capabilities internally, Owens Corning adopted the concept of knowledge transfer, by which transference of all necessary skills to Owens Corning's employees at the end of the project was ensured. [Al-Mashari, Majed and Al-Mudimigh, Abdullah, 2003]

Lack of change management

Amoco, a leading US oil company, developed a series of “job impact analysis” documents which were reviewed by the implementation teams and then by middle managers, to “force” them to become involved, and thus minimized their resistance. As a consequence of this failed experience, the IT function was not sufficiently

equipped to carry out the SAP implementation. Scarcity of experienced staff, lack of training, education, and increasing overload have all contributed to the failure of the efforts. This requirement was underestimated at the beginning, and end-users resisted the new system because they were not given enough skills to work with it. Besides empowering the IT function with the necessary training and resources, it should also be prepared to meet the IT management challenges that SAP brings about. [Al-Mashari, Majed and Al-Mudimigh, Abdullah, 2003]

Lack of communication

The importance of communication stems from the fact that it could build the competence of the whole organization in re-engineering efforts, and gain everyone's commitment, support and response. Companies implementing ERP systems should establish extensive internal communications channels, including focus groups, newsletters, e-mail and Web-based archives, to help keep employees informed about new developments, and answer questions about the ERP implementation. [Al-Mashari, Majed and Al-Mudimigh, Abdullah, 2003]

Lack of performance measurement

This happens when the progress of the ERP project and its resulting benefits were not formally measured. Having a comprehensive measurement system provides a feedback mechanism to track implementation efforts, identify gaps and deficiencies in performance, and recommend the necessary actions to fine-tune the situation in hand in order to achieve the desired business-centered outcomes. [Al-Mashari, Majed and Al-Mudimigh, Abdullah, 2003]

Propensity to isolate IT from business affairs

Companies fall in this trap when they adopt a technical perspective, viewing IT as a force affecting, and leading to a certain organizational form. This situation indicates a lack of alignment between business strategy and IT strategy. This might be put down to a lack of developing, and thereby cascading, a solid and well-defined business-centered case for the entire change initiative. Experiences reported by best practice companies show how the business case for ERP implementation can be developed to address both organizational vision and operational measurements. [Al-Mashari, Majed and Al-Mudimigh, Abdullah, 2003]

Managing the change process

Recognizing the need for change is very important. Organization culture and structure should be managed carefully. A culture with shared values and a strong corporate identity that is conductive to change is critical. User involvement in all phases of the project, education and training should be provided to help change process to be seamlessly done. [Fiona, Kathryn, Janet Lee 2003]

Nestle company's CIO, Jerri Dunn, noted in an article in CIO magazine in May 2002, no major software implementation is really about the software. It is about change management. Dunn said, "when you move to SAP, you are changing the way people work. You are challenging their principles, their beliefs, and the way they have done things for many, many years." [Gregg Stapleton; Catherine J. Rezak, 2004]

Change management is often viewed as a separate set of activities that take place during a project. In concept, the goal of change management in ERP implementation projects is the transfer of ownership from the project team that designed and configured the new system and processes to the end users, the internal clients who would employ these tools and processes in their day to day activities. Practically, it meant deconstructing ownership transfer into three fundamental drivers:

- Knowledge Transfer: ensures that employees know what to do
- Responsibility Transfer: ensure that employees fully participate in the implementation
- Vision Transfer: help employees translate new tools and processes into improved business results

[Gregg Stapleton; Catherine J. Rezak, 2004]

Communication is a very crucial mechanism for achieving transfer of ownership. Communication process is needed in a continuous manner. Communication comes at three levels:

1- Utilizing the one-way communication channels like newsletters, a web site, road shows, and awareness campaigns for the purpose of raising understanding and awareness among employees

2- Utilizing the two-way communication or the interactive communication methods like workshops, issue-tracking meetings, conference calls and collaborative web sites
3- Hands-on interaction, which includes validation sessions to test concepts with subject matter experts

No change ever happened without executive support. Support has to include the CEO's sponsorship and visible involvement. Top management support has been widely acknowledged as a key success factor in ERP implementation. It influences both commitment to resources and commitment to change management. [Fiona, Kathryn, Janet Lee 2003]

Project champion was rated high in many researches as a key success factor in ERP implementation projects. The project champion's role is transformational role. The project champion not only promotes highly the ERP implementation and its associated change, but also manages resistance to change. [Fiona, Kathryn, Janet Lee 2003]

The Case

Saudi Electricity Company (SEC) is the only electricity service provider in the Kingdom of Saudi Arabia. To meet the fast changing market requirements and high demand for changing and unifying work procedures and processes especially after merging the four Saudi Electricity companies in year 2000, the company started a strategic ERP implementation program called "Nebras" which is an Arabic name means “cresset”. Nebras is not a project, but it is a continuous program composed of many projects. Feasibility study of Nebras started on 2003 and approved on mid 2004 by the company's CEO and to be implemented in phases. Nebras's aim is to replace existing procedures and processes with international best business practices company-wide using best technological tools available. For that the company decided to have a vanilla implementation of ERP system (SAP) minimizing the customization of the software. The first phase of the program started on August 2005 with projects for Finance and Human Resources business lines followed by projects for distribution & customer service and logistics business lines.

CEO Sponsorship: A Letter from the CEO to SEC Employees

"Dear SEC Colleagues,

To keep up with the changes that have occurred within the Saudi Electricity Company, and to enable the company to achieve its aims more effectively, we have concluded that it is necessary to implement an Enterprise Resources Planning System (ERP). This has been adopted by many large international and local companies and will be of great, positive impact on the SEC’s business. The Company made a strategic move by adopting this system, which is called "Nebras", and is looking forward to raising the general performance, and enhancing the interoperability of the various systems within the SEC. This is all done for the purpose of achieving the highest standard of efficiency, raising the standards of the services provided to our customers, and applying International Best Practice. With thanks to God, the project's first phase (covering the Finance and Human Resources systems and processes) was launched. More phases, covering other business processes, will follow with a view to increasing the Company’s profit and fulfilling our expectations.

Dear Colleagues,

Nebras's success requires the full cooperation and continuous interaction of all employees with the Nebras work team. The Company will provide the necessary training programs required for this project in proper times. May God bless you in your sincere efforts, and guide you in the right direction. My best regards and wishes for your success." SEC CEO.

Business Drivers toward ERP Systems

The business drivers of SEC toward implementing ERP systems are as follows:

1. Integrate into one system from four (from 4 to 1). Currently there are many fragmented information systems for each operating area (Eastern operating are, Western operating are, Central Operating area and south operating area).
2. Drive efficiency into business processes
3. Integrity (financial) removal of redundancy in process and systems
4. Information security
5. Improve customer service
6. Single information source

Business Drivers toward ERP Systems (Distribution & Customer Service Project)

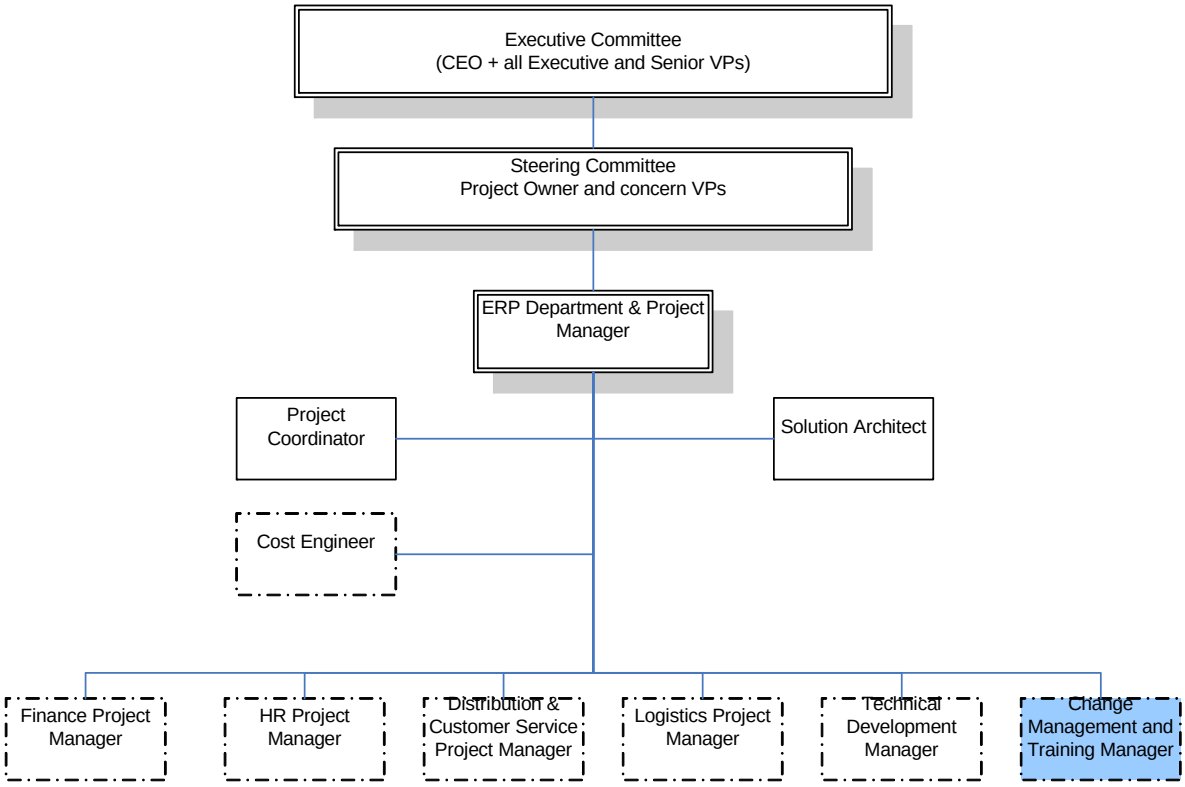
The business drivers of the distribution and customer service project which is one project for one business line under the umbrella of Nebras are as follows showing the priority for increasing customer satisfaction:

1- Increase customer satisfaction
2- Increase sales and reduce costs
3- Improve management of demand side and enterprise assets
4- Improve planning processes
5- Improve meter reading process
6- Meeting new demands

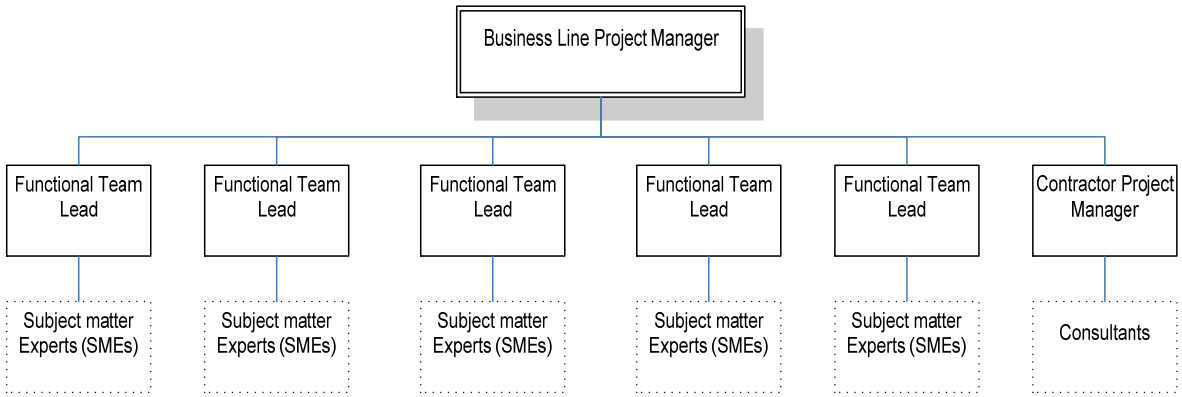
Organizational Structure of the ERP Department

As an important part of the program, a department has been formed to handle and manage Nebras projects. The department has a department manager, projects managers with their teams, technical development manager and change management and training group as shown in the organization chart below. The department manager

is reporting to a steering committee composed of senior and executive VPs and this steering committee is reporting to the CEO of the company (sponsor of Nebras). Business lines project managers (Finance, HR, Distribution & Customer Service, and Logistics project managers) report in a matrix structure to both the ERP department manager and their business lines executive VPs. Project managers and their teams are from the business lines they belong to. A project charter is signed by both project managers that represent their business lines and ERP department to clarify policies and roles that govern the relationship.



Projects Organizational Structure



ERP Department Mission

Mission (what we do - why we exist)

The Enterprise Resource Planning Department (ERPD) of The Saudi Electricity Company (SEC) is a management and technology consultancy that partners with its clients and provides the lead role in implementing and supporting solutions to complex business issues facing SEC.

Implementation Methodology

SEC used SAP standard implementation methodology to be the base for Nebras projects. This methodology represents SAP company cumulative experience in implementing SAP solutions. Implementation process in SEC is audited and revised by SAP auditors to ensure compliance with standard methodology. See the figure below.

Voice of the Customer

SEC chose to have a vanilla implementation of the ERP system using the standard implementation methodology developed by SAP. With this implementation strategy, the company will depends heavily on the practices embodied in the ERP system and applied internationally. This means the practices that directly touch customers or affect customer satisfaction will be an imitation of the practices agreed to be called “best practices”.

Role of Change Management Team

Change Management seeks to align the organization and the new ERP system, maximizing the benefits of the change and ensuring End User understanding of the change impacts. The major activities that would be handled by change management team are:

- Managing business impact (process, job roles, & org structure)
- Risk Mitigation (people, process, technology)
- Communication
- End User Training
- Surveys (before project launch and before going live)
- Measuring site readiness

Measuring SEC Readiness for the Project

Change management team follows the following steps to measure business line readiness for Nebras projects:
Preparation → Readiness Status → Stakeholder Identification → Change Impact → Recommendations

<u>Change Management Readiness areas involve:</u>

- ✓ Clarity of vision
    - o Awareness of business drivers
    - o Awareness of need of change
    - o Awareness of organizational benefits
    - o Awareness of impact on daily work
- ✓ Commitment to change
    - o Commitment to the project objectives
    - o Willingness to get involved
    - o Organizational discipline for change
    - o Deliver benefits by way of change
- ✓ Coordination leadership
    - o Top Management commitment
    - o Middle Management commitment
    - o Clear leadership roles/responsibilities

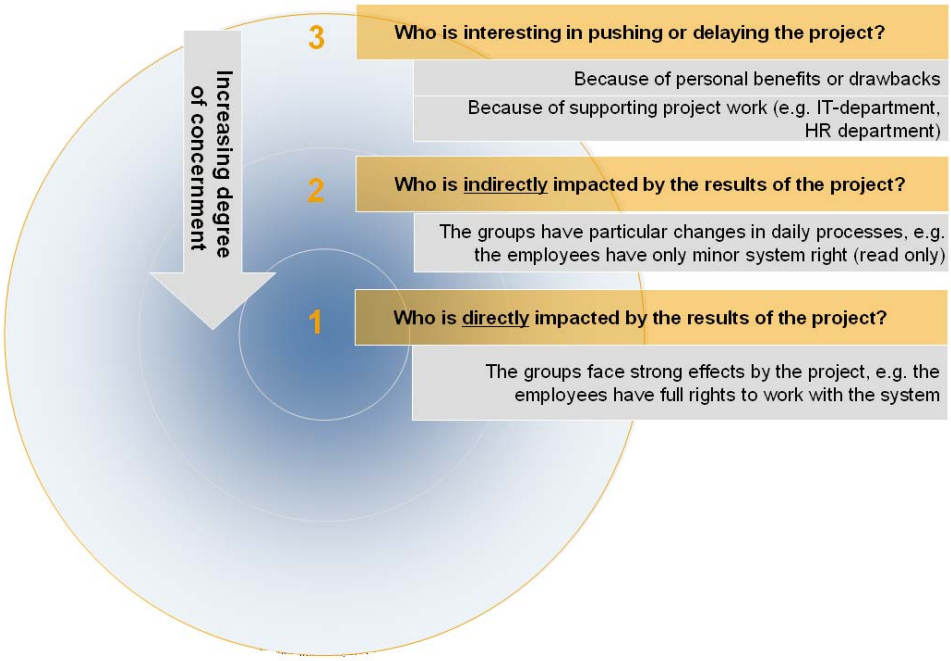
- Effective resolution of NEBRAS issues

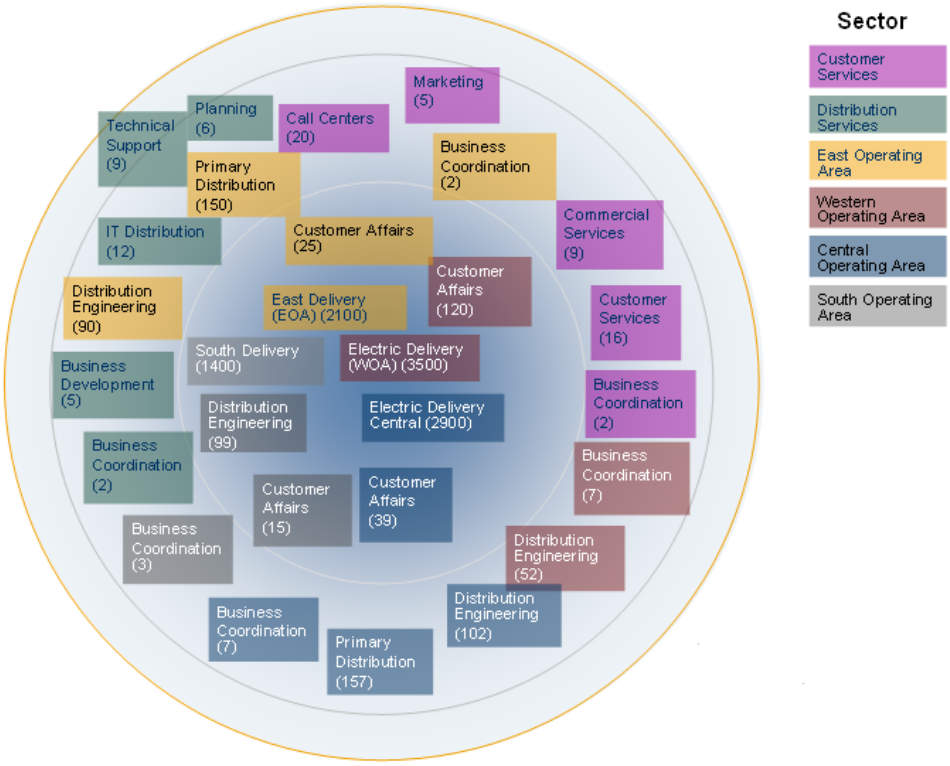
✓ Competencies
- Sufficient training expected
- Preparedness for role/process changes
- Enriching of individual technical skill sets
- Enriching of individual methodical/soft skill sets

✓ Communication
- Adequate information quality
- Satisfactory communication channels/media
- Good working Feedback mechanisms
- Quick response times

Stakeholder identification

The three skin model has been used where the more centered the groups are, the higher is the impact of the project on the work of the group. See the figure below which represents the stakeholder identification of the customer & customer service business line. It has been found that 94% of impacted employees in the distribution and customer service business line are highly impacted by the change.





Stakeholder identification: Three Skin Model

Case Analysis and Discussion

Based on the facts and information shown in the case, let's examine and evaluate the project qualitatively having an eye on what was stated in the literature review. I will analyze the case using the same topics mentioned in the literature as critical success factors or pitfalls.

The company took seriously the lessons learned from the successes and failures of other companies' ERP implementation projects and established a change management team as a part of the implementation program. In the following sections, I will discuss the issues related to change management in our case.

What motivated SEC toward ERP systems

The company conducted several top management workshops to come up with the drivers for changing into ERP systems for the company and for each business line. These workshops revealed the forces for change and helped diagnosing the problem. From the business drivers shown before, we can say that, replacing legacy systems, standardizing and simplifying business processes and systems, and improving customer services are the main motivators in our case where these motives resembles what has been mentioned in the literature. However, a major driver or motive toward change that has not been mentioned is the preparation for a deregulated market which could encompass all previously mentioned reasons.

Business Process Re-engineering and Decentralized Decision Making in SEC

The company in the case is living in a monopolized market with a vertical hierarchical structure. This structure could prove its appropriateness in such market when the company was looking for efficiency, specialization and control through centralized decision making. However, today’s forces for change are different and the company chose to re-engineer its business processes. Re-engineering business process as indicated in the literature requires a decentralized decision making process (to be more responsive to customers’ needs) which has the effect of flattening organizational layers (decreasing the need for mid-level management) and empowered employees. This could be a very tough obstacle where decentralizing decision making would be very difficult with existing organization structure and thereby difficulty in having a

full advantage of re-engineering business process around those embedded in the ERP system (best practices) developed based on competitive markets and flattened organizations.

Organization Efforts to overcome resistance to process changes

In its trial to overcome resistance, many efforts were spent to prepare the organization for the new changes (or re-engineered process). A combination of reasoning (dissemination of information prior to change) and education (training and demonstration) approaches has been used. Some of these efforts involved heavily involvement of employees from the business lines in the projects, awareness campaigns and communication efforts, training and top management commitment. With all these efforts, still there are some areas that need to be addressed and reworked. These areas include rewarding participation in the projects where rewarding and compensation system plays a very crucial roles in organizations change process, company cross-wide involvement in the project (involving more employees from operating areas other than eastern operating area), obtaining full commitment from middle level management and including all levels of the company in the educational and training process.

Cross Functional Coordination

Our company in the case successfully addressed this issue very well and formed a steering committee to be top of the project team to resolve any conflict and provide continuous commitment and support to the projects teams.

Project Team & the Project Charter

Project department successfully formed with program slogan or name “Nebras”. Department has a manager that is the champion of the change agent, consultants (internal & external), system architects, change management team, technical team and projects teams. Each project relevant to a business line is composed of project manager, team leads, consultants (external) and subject matter experts. Business lines projects managers, team leads and subject matter experts are all employees from the business lines. Project charter was developed and signed by the ERP department and projects teams and projects sponsors to clarify all rules and policies govern the

relationship. With this, the company successfully avoided the pitfall of isolating IT from business affairs. The main point noticed here is that the location of this program team is in the eastern operating area, previously was SCECO East, and change agent as well as most teams' members and leaders are from the eastern operating area too. To deal with this issue that could increase the resistance in other operating areas, several employees from other operating areas were assigned as fully dedicated representatives of Nebras in their areas (refer to the org chart of the change management team).

Training and End-User Involvement

End user employees (business employees) or those affected by change are involved in the projects mainly through one of the following roles:

- Functional teams leaders
- Full time (dedicated) subject matter expert SME: those with knowledge or experience in one or more areas of SEC business process
- Part time subject matter expert
- Power user (Trainer)

Subject matter experts will play a crucial role in overcoming resistance and facilitating acceptance of the re-engineered process, since they remain in their departments business, have respect of their peers and would be the link between the project and the business as a communication channel. In addition, they will heavily participate in the project and system simulation workshops. In addition, SMEs and power users are engaged in conducting training and developing the training materials as well as playing the mentoring roles.

Change Limiting Conditions (victory organizations)

Program manager successfully obtained top management commitment to the program projects. But, still other limiting conditions exist and could be an obstacle. Formal organization which involves org structure (hierarchical structure), policies, procedures, top management philosophies and systems of control are obstacles that are very hard to change. This could indicate that the level of top management commitment is limited. Organization culture is another obstacle. The company's culture is not competitive or learning culture. It resembles governmental

organizational cultures to some extent. Such culture will make it very difficult for major improvement changes to take place.

Conclusion

Based on the case discussion section, we can address the major areas where SEC successfully utilized that will lead to successful ERP implementation. These most effective means were:

- ✓ CEO sponsorship of the project and management involvement "commitment" in the steering committee of the project
- ✓ Transformational champion (leader)
- ✓ Placing high importance "striving" business process re-engineering around ERP best practices
- ✓ Striving team work
- ✓ SEC methodology (implementation plan) toward the implementation process
- ✓ Emphasizing the role of change management in the project
- ✓ Heavily involvement of business employees in the projects along with technical people (change management, functional teams, training, workshops)

On the other hand, some areas need to be addressed where SEC should do more work on them to harvest the most gains out of their huge investment. These areas involve:

- ❖ Being a **victory organization**: SEC hierarchical organizational structure could be a major obstacle toward gaining the most out of ERP system and re-engineered process. Fore example, ERP promotes empowerment and elimination of non value added activities to maintain fast customer responsiveness and lower costs, but the organizational hierarchical "control" structure could reduce this.
- ❖ Company-wide involvement of employees is not conducted well.
- ❖ Linking the project to the rewarding system
- ❖ Education of management level employees

Research Limitations

1- Findings are based on subjective interpretations of the researcher

2- Inability to generalize from the study results since it is based on one case study.

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