Implementing an Enterprise Project Management System in a Large, Multidisciplinary Engineering Consulting Firm

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IMPLEMENTING AN ENTERPRISE PROJECT MANAGEMENT SYSTEM IN A LARGE, MULTIDISCIPLINARY ENGINEERING CONSULTING FIRM

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ABSTRACT

Enterprise Project Management (EPM) is an organizational development activity intended to support the integration of project based, multidisciplinary teams into a transformational organizational structure. A case study was conducted to examine the effectiveness of EPM implementation in an engineering consultant firm comprised of seventeen departments and 31 disciplines. Early results suggest that the EPM implementation was successful in improving processes and performance, and significant change in culture is underway. However, the lasting effects of EPM can only be determined through long term monitoring of the persistence of change.

KEYWORDS: Case Study, Enterprise Project Management, Enterprise Resource Planning, Organizational Development

INTRODUCTION

As the speed of change continues to increase in the different industries in the present times of globalization, change management is a fundamental competency needed by managers, supervisors, human resources staff, and organization leaders to run the organizations/companies successfully. Companies are also required to modify productive processes or strategic goals in response to an external influence, change in consumer behavior or a shift in the industry landscape as a result of the change management. This necessitates a reorientation of capital, resources, employees and corporate systems. Two of the main causes for such an organizational change are strategic refocus and structural change of the organization. When the company changes its business processes to adopt a new paradigm, organizational change ensues. For example, when a company shifts its focus from a product centric to a customer centric platform or changes its mode of operation from a functional type to a project-based one. Again, when new

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administrative processes get introduced, organizational change results such as the ramifications of centralizing an archiving process using computer technology when the old redundant processes get replaced by new software and hardware and staff members are required to retrain to operate the new systems. The present case study attempts to find out and analyze the reasons that initiated a change management system in large multidisciplinary civil-construction based organization consisting of seventeen departments involving 31 disciplines, the issues that cropped up while introducing the change management system and also whether this system proved to be successful or not. The change management system that has been discussed in the paper is implementing an Enterprise Project Management (EPM) that attempted to change the organization’s structure from a weak matrix to a strong matrix type.

LITERATURE REVIEW

Broadly speaking, Enterprise Project Management (EPM) is derived from the field of organizational development (OD) and is specifically designed to support organizations in managing integrally and adapting themselves to changes in their operating environments. OD can be defined as a planned, organization-wide effort to increase an organization's effectiveness and viability. OD can be also referred to as a response to change - a complex educational strategy intended to change the beliefs, attitudes, values, and structure of organization so that they can better adapt to new technologies, marketing and challenges, and adopt an accelerating rate of change. EPM is a subset of Enterprise Resource Planning (ERP) systems designed to integrate organizational functions. Significant research has been conducted on ERP systems and in fact, it is one of the leading management systems in the manufacturing industry. An extensive review of ERP literature exceeds the scope of this paper, but as EPM and ERP share the same basic characteristics, an abbreviated literature review focusing on ERP systems and their relevance to project management systems throws light on the EPM system and its importance in the project management systems.

ERP has emerged as the core of successful information management and the enterprise backbone of organizations. The difficulties of ERP implementation have been widely cited in the literature. Nah, Lau and Kuang (2001) reported eleven factors critical to ERP implementation success: 1) ERP teamwork and composition; 2) change management program and culture; 3) top management support; 4) business plan and vision; 5) business process reengineering with minimum customization; 6) project management; 7) monitoring and evaluation of performance; 8) effective communication; 9) software development, testing and troubleshooting; 10) project champion; and 11) appropriate business and IT legacy systems.

The Enterprise Project Management (EPM) is aimed at providing an integrated set of management architecture with the help of a computer based tool, (typically Primavera), to improve on the current lack of support. As mentioned by J. Stader (1996), the four most
important facilities that are required for system development are Integration, Communication, Flexibility and Support.

Dingyong et al. (2009) established the importance of creating standardized processes and technical documentation templates, establishing knowledge management information systems and constructing a knowledge sharing culture and described these factors as the most efficient means to solve knowledge management issues in project management based organizations. Knowledge is the most important source of advantage in project management based industries, so if the enterprise can effectively manage and use knowledge, it will improve project management quality, shorten project operation time and increase customer satisfaction. Especially in today's social environment with frequent movement of people and dynamic and changing knowledge innovations, management of implicit and explicit project-related knowledge is a necessary prerequisite for success of the project, but managing these intellectual assets is a new and challenging project management process.

Somers and Nelson (2001) report several critical factors in successful ERP implementation, including 1) support of senior management, 2) redesign of business processes to “fit” what the software will support, 3) investment in user training, 4) avoidance of customization, and 5) use of business analysts with both business knowledge and technology knowledge. A similar case study by Clement et al. (2010) investigated the effects of a large ERP deployment project on the organizational agents who use it within the framework of their activities. The aims of the project were to standardize the company's information system (IS), and it represented, 1) a change on both individual and organizational levels; 2) a detailed project management plan leading to change management within the framework of projects; and 3) discussions relating to whether a "structured" change management approach could be an efficient way to make project teams deal with individual change in order to succeed in ERP deployment.

Gupta (2000) identified some challenges faced during the real time implementation of an ERP system. The major challenges include the need to provide appropriate training to the end-user through 1) in-house training labs; 2) “train the trainers” programs; 3) hiring consultants to provide the training; 4) proving intranet or CD ROM applications training and 5) checking the global compatibility of the ERP system in order to make a balance between the cultural differences and corporate balance across the world. The other challenges are to ensure that the ERP system is flexible and that the implementation of the system is completed on time because many implementation attempts have failed due to lack of focus, funding and business participation.

Another important aspect of the implementation of EPM systems is the transformation of the organization from a weak matrix to a strong matrix type. Ford and Randolph (1992) define matrix organizations as those organizations that lie at any region within the continuum created by
purely functional organizations at one end and purely product type / project-based organizations on the other end. However, to define the matrix organizations more clearly, the researchers have classified it into three sub-categories – functional, balanced and project in order to identify the primary source of decision authority. Under the functional matrix (weak matrix) structure, the functional manager retains the ultimate decision making authority over the matrix unit, its personnel and ultimately on the project. Under the project matrix (strong matrix), however, the project manager has the primary control on the project and its resources while the functional managers only play a supporting and advisory role. The balanced matrix is however, midway between the two where the project manager sets control on the project’s goals and direction whereas the functional manager mainly controls the team and the resources to meet the technical goals and directions set by the project manager. Ford and Randolph (1992) also reported that the development of the matrix organization is an evolutionary process - most organizations begin as a traditional or functional form hierarchy, but over time, as the organization faces several complexities and dynamics of the projects, they start to move toward project organization structures. The present case study provides practical evidence in support of this literature and it offers some reasons for why many engineering organizations are changing their structure from functional type to a project-based type.

Although the implementation of ERP systems has become very common in the software and manufacturing industries, the trend toward globalization has increased the importance of ERP systems in the Architectural, Environmental and Construction (AEC) Industry. Issa, Flood and Caglasin (2003) conducted a research study which mainly focused on the level of adoption of e-business within project management systems by the general contractors. The researchers found that even though e-business tools have a very short history and represent largely new technologies, they are becoming a key component in transforming the industry. The need for globalization, communication and collaboration together with the global competition is shaping the business structure and culture, requiring business processes to be fast, specialized, personalized, flexible, functional, reliable, and customer-centric. The researchers found that the US construction industry, which is fragmented among general contractors, subcontractors, architects, engineers, laborers, and developers, is also adopting e-business tools in the form of Project Management, ERP systems, Supply Chain Management, Knowledge Management, E-commerce, E-procurement, Project Collaboration and Internet/Extranet facilities. Standardization, electronic forms, the automation of forms, and exchange of data are crucial issues for the construction industry because these are exchangeable among the project parties and represent largely reusable information, thus helping the industry avoid rework (Issa et. al, 2003). However, the most popular E-business initiative that the construction industry needs is standardized documentation software that automates the daily workflow. It is interesting that, in the present case study research, the same concept has been utilized to implement the EPM system in a fragmented, multidisciplinary organization to harmonize all the departments and
individual employees along with standardization and optimization of the entire business process
with the help of project management tools, such as Primavera.

METHODOLOGY

The primary methodology utilized in this research is similar to a “participant observer”
design with case study development. Participant observer is a well established qualitative
research method which analyzes data from direct observation, including personal interviews,
field experiences, and review of written documents. Participant observer methodologies are
particularly applicable to inductive study of complex, real-world concepts which require
narrative descriptions and the construction of robust case studies (Patton 2005). The data were
collected through the observations of the primary researcher while participating as a member of
the EPM implementation group. The implementation group was termed “EPROM” within the
organization and will be referred to by that acronym hereafter.

Participant observer research methodology is more common in anthropology and
sociology, but can be particularly well suited to examination of management issues where
interpretive data gathering of complex, integrated information management systems is the
outcome of interest (Nandhakumar and Jones 2002).

Yin (1984) mentioned that case study research methodology will be relevant if the
research questions seek to explain some present social circumstances or require an in depth
description of some social phenomenon. The present research study is based on finding the social
and cultural changes of a multidisciplinary organization due to implementation of a special type
of ERP system and thus the case study methodology is ideal for the present study. As mentioned
by Yin (1984), the case study method allows the investigators to retain the holistic and
meaningful characteristics of the real life events such as small group interactions and
organizational and managerial processes and this typical characteristic of the case study research
technique has led the researchers to adopt it for the present study.

Even though the participant observer was a member the EPROM group, participant
observer bias does not play a major role for this particular study. Participant observer bias is
caused largely by partner attributions (attributing meaning to statements of other members of the
subject community). These biases are overcome by moving away from abstract meaning and
asking the partners to utilize language with concrete meaning (Fiedler, K., Semin, G.R.,
Finkennauer, C., and Berkel, I., 1995), which was the approach, utilized in this case study.

The methodology used to analyze the situation included structured interviews at different
levels of the organization, records of the attrition rate from the human resource department,
analysis of the reasons provided by departing employees at exit interviews, analysis of the
organization’s overall turn-over and review of the brainstorming process among directors, departmental heads, chief engineers and experienced persons from other levels. Data included qualitative information from interviews and the brainstorming process and also some quantitative data regarding the attrition rates, company turnover, etc.

During the data collection process extreme care was adopted in order to avoid getting false information from the exit interviews, surveys or analysis of the documents from the human resource department. Both formal and informal interviews were conducted among all the levels of the organization ranging from drafting personnel to the head of the departments over the course of one year to develop an overall idea about employee attitudes regarding the company. In order to get unbiased information, an online survey about employee satisfaction was carried out where employees were asked to state the reasons for their satisfaction and dissatisfaction about their working in the company anonymously. This enabled an unbiased data collection as the employees spoke their mind without any fear of reprisal by their bosses or of losing their jobs. Moreover, the system of stating the reasons for an unwanted / early resignation by the employees also helped in analysis of the drawbacks of the company’s management system. All of these analyses led to the revelation that the company’s project management system had become inefficient, leading to poor controlling and monitoring of projects centrally, inefficient manpower planning and allocation resulting in employee dissatisfaction and poor co-ordination and integration among the different departments, the cumulative effect of which was reflected in the company’s annual turnover.

The thorough data collection and analysis, explained the necessity of implementing a strong project management system / enterprise resource management system in the company. The brainstorming processes that guided the implementation of the EPM system can be represented by the following flow-chart:
The case study is derived from an EPM implementation at M. N. Dastur and Company Private (P) Limited (Dasturco). Dasturco offers integrated design and engineering consulting services for a wide range of projects in metallurgical, mining, chemical, cement, power, environment, infrastructure, and other allied industries. Dasturco was founded in 1955 by Dr. Minu Nariman Dastur, a pioneer in providing consulting engineering services in India. The company specializes in project planning and appraisal, economic evaluation, design and detailed
engineering, procurement assistance services, project management and supervision of construction and erection, environmental engineering and pollution control, energy management and optimization, human resource development, and management consultancy. Over the years, Dasturco has built up a multidisciplinary team of about 2,000 professionals and technical staff with varied experience, fully abreast of 'state-of-the-art' technologies, with intimate understanding of the latest trends, combining creativity with initiative. Dasturco provides a unique blend of experience and talent, catering to the specific requirements of each project.

However, the company has recently been challenged by continuous “brain drain.” In the competitive Indian market, the organization was losing its best talent to its competitors, subcontractors, and new upcoming ventures. The attrition rate had reached all time highs in 2006 and 2007, when many senior professionals in the organization decided to sever ties with the organization. Not only senior, experienced personnel departed, but also large numbers of high potential entry level employees left the organization. This forced the top management to re-evaluate the existing culture and operation of the organization. The talent exodus led to a decrease of the technical competitiveness of the organization. The organization had a historic reputation for technical expertise over its competitors, but with departure of top talent, the work pressure for the remaining employees increased significantly, causing dissension among remaining employees. Also, the attrition in the organization set off speculation thereby diverting employees from their primary goals regarding project performance. The morale of the employees hit an all time low and as a result the productivity had declined, eventually resulting in complaints pouring in from the clients. This led to the value of the brand name being eroded over time, and numerous potential projects and clients chose other engineering service providers. The defection of clients became a prime concern for top management.

After a thorough brainstorming process, it was found that one of the prime reasons behind the decline in market position was due to the noncompetitive salary structure. The organization had always boasted of privileges, perks, and benefits to its employees but not attractive salaries. With the advent of multinationals in the country and the job scenario becoming more and more competitive, the employees’ needs had changed and they began to be lured with increases in their salary structure. Organizational comfort and working atmosphere were no longer the prime concerns for employees. Instead they started valuing the financial returns. Also, the dwindling number of projects and the diminishing market share of the organization added to their woes. The solution to all these issues was generally straightforward: attract more projects for the organization; satisfy clients better and; retain the best talent. More projects would mean more revenues and in return higher salary for existing employees, thus making the pay structure more competitive. In order to retain the employees Dasturco needed to be paid more, but that could only be achieved if each employee handled more projects. However, there is a limit to the number of projects an organization can handle with the given set of
resources deployed under existing structures and processes. However, if resources are being used at a sub-optimum level, restructuring and investments in technology may be able to increase capacity without adding resources. When further drilled down, it was found that the resources were not being utilized optimally. Far from being optimally utilized, it was found that some of the resources were highly under-utilized and barring a few, most of the employees were not allocated sufficient jobs according to their capability. Thus many employees did not have enough work according to their skill level which made them idle and inefficient. The organization was reputed for its high levels of job security. It was more like a semi-government organization where over the years it had seldom eliminated any employees. Even in tougher times like mild recessions and dips in the economy, when other companies in the same industry were busy downsizing, this organization had been very loyal to its employees. This had secured them a loyalty from the employees but also this had made the employees more complacent, because irrespective of their performance they would be retained in the organization. Thus, the need for a foolproof system arose which would help the organization to monitor its resources and utilize them optimally. The answer to this challenge was found with the implementation of an EPM system.

In the current environment of industrial recession and tight financial controls, it has become an important concern for all organizations to cut down their budgets and go for projects which incur less cost at the beginning so that if at any point the condition becomes worse there is less of an impact on the organization. However, organizations also need to be positioned to pursue some risky projects in order to grow and earn higher profit margins for which a long project timeline is required. This is another reason Dasturco sought to implement EPM system in their organization as a tool for OD. The concept of the EPM system is designing an integrated ERP system for the organisation with an objective to standardize the business processes, the project management practices and the engineering services which are being rendered to the client for their projects. The objectives for the development of the EPM system are standardizing organizational systems, developing templates for all documents, optimizing resource and time, controlling budgets and project costs, venturing for a higher number of projects along with a greater variety of projects, establishing co-ordination and integration among all the departments and disciplines and generating a database to preserve historical data.

**Expected Outcomes of the EPM System Implementation**

Dasturco sought to implement an EPM system in their organization as a tool for transforming and re-energizing the organization. The basic concept behind the EPM System is designing an integrated ERP system for the organization with an objective to standardize business processes, project management practices and engineering services which are rendered to the client for their projects. The specific objectives for the EPM system are:
1. Standardization: Unlike manufacturing organizations, which have a set rule to produce the same general quality and type of products throughout the life-cycle of the organization, an engineering consultancy firm like Dasturco, dealing with various types of projects in different fields, cannot have such standardized methods to deliver projects. But, from the customer point of view there is a need for the projects to be done in a standardized way. In fact, following some standard rules for the delivery of each project is also beneficial for the organization. The EPM system is being used as a tool by Dasturco to deliver projects in a standardized mode. This is only possible because some aspects of the projects performed by the organization have a similarity among them and thus have a repetitive nature and this repetitive nature is being captured by the EPM System.

2. Template formation: Preserving of “Templates,” meaning standard formats of all types of documents and the working procedures facilitated by the EPM system. For a project of a particular type, all the protocols and formats for preparing the documents can be retrieved and used for the project. Thus a standardization is introduced which in turn reduces the repetitive work for the resources, saving time, cost and budgets for the projects and increasing the overall efficiency of the work. Previously, these standard documents existed, but it was limited to the individual personnel or to that particular department and hence its access to all the people of the organization was not possible. Personnel created their own standards violating the overall standard of the organization. Moreover these documents could not be accessed by all the branch offices in India and also abroad. The new system however made it possible for all the individuals, departments and the branch offices along with the site offices to work on the same platform following the same standards and methods.

3. Optimization: Optimization of resources, project time, cost and budget is the most important outcome of the implementation of this project. This system, in fact, will capture the skill set and proficiency level of each resource across the company and based on the actual work delivered by each resource, their performance will be evaluated. This will facilitate resource optimization for the entire organization with manpower capacity of about 2000.

4. Manpower Planning: Manpower planning for running / future projects is another objective of this EPM system. It is actually the outcome of the efficient resource levelling as this is only possible when the resource utilization is optimized.

5. Controlling and Monitoring Projects Centrally: EPM creates a common platform for centrally governing and monitoring all the projects within the organization with respect to the time schedule, cost, budget and quality. It also facilitates close
monitoring of the performance of the organization and employees on an overall basis.

6. Venture for More Projects: Due to optimization of the project resource, the same resource can be utilized in more than one project and hence the company can venture more projects and earn more revenue.

7. Co-ordination and Integration: This is an important result that will be obtained after the complete EPM implementation. In a traditional organization like that of Dasturco, the functional departments play a major role in performing the projects and in doing so they give more focus on their departmental work rather than on the particular project. But this EPM system will form a Project Management Office (PMO), a group of project managers and directors who will take care of all the projects.

8. Integration of Timesheet with the EPM System: Integration of the EPM / ERP system with timesheets in order to assess employee performance through this integrated system. This will also help to monitor each employee of the organization closely and understand their efficiency and productivity. This information can be used to retain and reward the most efficient people in the organization. Recognition may be offered in the form of a special bonus, incentives, awards, etc. This is an immense change in the organization culture because at present this type of special recognition to the employees is not prevalent.

9. Efficient Human Resource Management: Integration of timesheets will result in a better HR management process as they are intricately related to each other. As the EPM System brings transparency in the organization at all levels, this will portray the actual standing of the organization and also reveal the loop-holes that are present in labor cost tracking. The HR department can get this data from the system itself and analyze the needs required for improvement. As mentioned before, they can also view the individual employee’s performance which will help them to make decisions at the time of the performance appraisal.

10. Introduction of Project Portfolio Management (PPM) System: Project Portfolio Management (PPM) is a management process designed to help an organization acquire and view information about all of its projects, then sort and prioritize each project according to certain criteria, such as strategic value, impact on resources, cost, and so on. The objectives of PPM are similar to the objectives of managing a financial portfolio: 1) to become conscious of all the individual listings of projects in the portfolio 2) to develop a “big picture” view and a deeper understanding of the collection as a whole 3) to allow sensible sorting, adding, and removing of
items from the collection based on their costs, benefits, and alignment with long-term strategies or goals 4) to allow the portfolio owner to get the “best bang for the buck” from resources invested. With the help of EPM System, the PPM can be introduced which will help the organization to plan all projects and also help the higher management to make strategic decisions for the organization.

11. Generation of electronic database: Over time, as the employees start working on this platform and the system will attain some maturity, data will be generated which will be automatically stored in the system. This will facilitate the retrieval of the data when it is required for a similar type of project. This will reduce the time for work by reducing re-work on the same types of projects and also will help to produce a standard methodology for the project. Thus, it can be said that this database generated for all the projects handled by the organization will act as future reference and guidance and also aid in adoption of best practices.

As a result of the participant observation and development of the case study, several major implementation issues were identified. These implementation issues represent potential barriers to be overcome if EPM is to be successfully deployed within the organization.

A key factor in EPM implementation was getting proper data and information from all relevant sources in the organization. This included personal interviews, archival records, and process reviews. Additionally, the EPROM team was concerned about a lack of buy-in from employees and potential resistance to the major changes being suggested. In return, the employees had concerns about the transparency of the system and the accuracy of the data reports. Furthermore, the team anticipated some rigidity among the more senior, long-tenured employees who held much of the institutional memory necessary for successful implementation. Lastly, the EPROM team was concerned about the effect budget constraints would have on the deployment of the program.

The major implementation of the project has been carried out in two (2) phases: Proposal making (1st phase) and the Execution (2nd Phase). The strategy behind this type of implementation is that Proposal Making is comparatively an easy process both from the standpoint of the system development and from system implementation. Also awareness of the system within the organization was a necessary first step. Also since proposal making is a pre-cursor towards the final goal (i.e. execution of the project), any hurdles faced during this process would give a rough idea about the type of obstacles that could emanate during the execution phase. The lessons learned during Phase I implementation would help the team solve problems encountered during Phase II. The second phase was mapping the execution process starting from the conceptualization to the commissioning of the projects. At this level, the roles and skill-sets of the resources are captured and mapped into the system so that the resource leveling could be enabled and optimization of the resources could be done. This is a much more complex process
and rigorous training must be conducted so that the employees feel comfortable working with the system.

The entire system was designed with the help of the project management tool PRIMAVERA. The Methodology Management version of the software is used to develop the methodology and the Project Management version is used for the various projects. This second part varies from project to project whereas the Methodology part remained the same for all similar types of the projects. Before the development of the methodology, an extensive data collection was done by the implementation group EPROM (formed out of the eligible members of the company itself). All these data were collected by conducting interviews with the experienced persons of the company-- the board of directors, heads of the departments, chief engineers, and senior engineers and also from the historical data and documents of the company. Then all these data were structured, analyzed, verified by the experienced seniors and then mapped into the Methodology Management system. The IT (Information Technology) back end infrastructure regarding the servers and communication systems were developed in parallel. The development of the system was followed by the training and pilot testing with the functional level employees. This was perhaps the most important part of implementation of the system because acceptance of the people and their understanding of the system would lead to the long term success of the EPM system in Dasturco.

Critical issues and findings

Most of the factors identified in the literature review were also found to be critical in the implementation of the EPM system as mentioned in the case study from India. In fact, the concept of knowledge management is one of the central ideas for the implementation of EPM System in Dasturco. The case study discussed in this paper describes how some of these factors were also found to be critical for the implementation of the EPM System. Interestingly, all of the issues identified in the literature are also depicted in the case study. These findings validate previous research, suggesting that EPM implementation issues are similar for engineering, design, and construction industry firms as they are for software and manufacturing firms. The findings also suggest that implementation issues may be common across different national cultures, although it is important to note that the case study involved a single culture (India).

Get Proper Data and Information

The major hindrance that came in the development of the EPM system was the gathering of proper data and information. Ignorance about the system led some employees to give incomplete data and information as they were concerned that revealing the data from their databank may decrease their importance in the organization and thus they may lose their position. According to some, there was the concept that this system was not secure enough to have all the core data and information of the company.
Lack of Acceptance by Employees

Some of the higher officials were of the opinion that the transparency in the work of different departments and also the individuals among different levels may cause discomfort among employees as they might feel that the organization does not trust them. Some work-phobic people were obviously against this system as this system can keep track of each resource’s man-hour and they were afraid of being tracked if they don’t perform their duties. Also certain higher officials were apprehensive about the implementation of the system. Probably due to lack of proper understanding, they were of the view that this kind of standardization might hamper the ingenuity or the thinking process of the engineers and employees would tend to become more archaic by referring to only past data for similar kinds of projects executed without applying their engineering skills at all. The database captured in the system would be treated as benchmark rather than as a reference and hence would be re-used for all projects notwithstanding the innate differences between any two given projects.

Rigidity of the Senior Employees

It is a well established fact that many large organizations do not adapt to change very easily or comfortably. Moreover, in an organization such as Dasturco, where the average age of an employee is 35-40 yrs and the people are somewhat “computer-phobic”, it is very difficult to introduce a system that requires computers at every stage of the work because most of the traditional people are more conversant with the paper documents and think that those are most reliable ones. They believe that computer data may be lost or may be shared (security problem) easily whereas this is not possible with the paper copies. Thus acceptability by this group of employees also created a problem.

Budget Constraints

Implementation of EPM system necessitated buying 1400 PRIMAVERA licenses, installation of PRIMAVERA compatible PCs, different servers for the IT infrastructure development, hiring of a consultant and imparting training to the EPROM group for understanding the system for future development and training of the functional level people. These investments represented a very high initial cost of implementation. This high cost of development and implementation of the system in this period of industrial recession when there are budget constraints in almost every sector of the industry was a risky affair. But looking for better long term performance and achieving long term success in future projects, top management decided to move forward with implementation of the EPM system.

Changes in Structure and Culture

A project management system provides a framework for launching and implementing project activities within the parent organization. A good system appropriately balances the needs
of both the parent organization and the project by defining proper interface between the project and the parent organization in terms of authority, allocation of resources, and eventual integration of project outcomes into mainstream operations. Dasturco is a matrix / hybrid of the functional and protect based organizational structure with a tendency to operate on the functional end of the continuum (i.e. a Weak Matrix Structure). The implementation of the EPM System has the greatest impact on the organization’s structure and culture and the changes that took place with regard to this can be analyzed as a pathway towards the future growth of the organization. The introduction of the EPM system changed the entire project management methodology and structure of the company from Weak Matrix to a Strong Matrix structure, which was also necessary for its continued success in the global marketplace (Ford R.C. and Randolph, A R., 1992.).

Client Satisfaction as the Driver

Since Dasturco is a consultant company, the main focus of the management is client satisfaction. Now the clients would be satisfied if their projects are delivered on time, within budget, maintaining the proper quality guidelines. But most of the projects were very discipline specific, i.e., structural design, civil design, utility pipelines design, etc and thus the mode of operation of the organization is functional. The departmental heads and group leaders were assigned the separate sectors of the project and were placed in-charge of that particular portion of the project. There were hardly any project management integration functions for the project. In other words, no one on the project team had an entire overview of the project and thus although the quality of work produced was extraordinary, the projects often missed their targets and could not be delivered on time. But the management continued to work in this fashion from 1955 to 2009 thinking that if the traditional work culture is disturbed then people may struggle in an uncomfortable work atmosphere and this may hinder the organization’s project performance. But the intense competition that had developed in the markets compelled the management to drive their organization from functional / weak matrix to strong matrix systems with high levels of project management and integration.

Need for Integration

It is evident how integrated project management became essential for the company’s success. The co-ordination between the different departments was cited as the most important criteria to deliver the project successfully and thus this could be achieved if there is a Project Management Office (PMO) taking care of all the projects. This was perhaps the main organizational structure concept developed through the EPM implementation.

LIMITATIONS
The research case study has the following limitations:

- The case study involves a single organization and the critical issues and findings are only relevant to this type of organization. However, further research can be conducted on the topic including a few organizations of similar organization structure and culture to validate the results.
- As the qualitative research is based on employee surveys and interviews, some suppression of facts may have occurred from the participant’s side even after adopting careful precautions to minimize this error. Thus it is an assumption of the present research study that the participants’ statements were generally true and unbiased.
- Since the EPM system was in a very nascent and developmental stage in the organization while the participant observations were made, it was not possible to compare the long-term effects on the organization’s structure and culture in the present research study. However, it will be interesting to conduct a follow-up research study in the future to investigate performance metrics such as increase in profitability, decrease in employee attrition rate, increase in productivity and other measures to compare them with the historical data before the implementation of the EPM system.

CONCLUSION

The main objective of an Enterprise Project Management system is modeling the business environment to assist top management in making sound strategic, tactical and operational decisions. In modern globalized and competitive markets, organizations are becoming increasingly complex and the competitive pressures require them to adapt to the rapidly changing markets as fast as possible. This in turn needs to be supported by methods and tools which would help them to model, analyze and improve various aspects of how their business works and how it is organized. This was also the main concept of EPM implementation for Dasturco. During the process of data collection and analysis regarding employee satisfaction about working in the company, it was found that one of the major causes of dissatisfaction was the personnel management and staff remuneration. The EPM system helped top management to track the individual employee’s ability and productivity which helped them in optimizing the manpower resources. This resulted in better decisions regarding the award of performance appraisal bonuses to the employees according to their work, diligence and productivity, which in turn motivated most of the employees. The EPM system with targeted performance-based compensation helped solve the problem of the increasing attrition rate, which was significantly reduced for the 2010 fiscal year (i.e. after the EPM was implemented). The productivity of the organization was also increased, at least in the short term. However, a future study on the long-term effects of the EPM system on the organization’s structure and culture will be able to explain some of the major
outcomes of the EPM implementation, such as how significantly the attrition rate was decreased or by what percentage the profitability of the organization and the projects were increased.

Apart from the employee satisfaction, the company was able to track its entire organizational activities; optimize the manpower resources and improve profitability both on the project and organization level. Although the cost of implementation of the system was significant, top management justified expenditure the investment as necessary because the company’s existence was at risk. Thus, in spite of facing several problems during the implementation phase of the EPM system, the outcomes were effective and successful and it has marked a new era for a large multidisciplinary consultant firm and opened a new horizon of competitive markets for the entire business.

REFERENCES


