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Contemporary Leadership Project

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Comprehensive Paper Presented in Partial Fulfillment

Of the Requirements for the Degree

Master of Science in Management

by

Santosh M Guha

Regis University

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ACTION RESEARCH PROPOSAL

An Action Research Proposal for Project Failures at Company XYZ

Abstract

Company XYZ has many challenging projects and initiatives for 2006 – 2007 as the company strives to meet the goals of operational excellence. Projects completed in 2005 indicate that 30 % of the projects failed. Cummings and Worley's (2005) Eight-Step Action Research Model will be applied to help identify the root causes for the 30 % project failures at the Company and develop an intervention that will reduce project failures. Further, the proposal would demonstrate a thorough literature review for the causes of project failures.

An Action Research Proposal for Project Failures at Company XYZ

At Company XYZ many projects fail to live up to the established expectations of the business customers. Some projects fail to achieve the schedule or budget goals or fail to deliver everything that was initially promised. Few projects just fail altogether. Many of the project problems faced by the Company can be avoided, or at least contained, by effective project management practices. Organizations and individuals have studied a number of projects that have both succeeded and failed and some common factors emerge. A key finding is that there is no one overriding factor causing project failure. A number of factors are involved in any particular project failure, some of which interact with each other. This action research proposal is to identify the root causes for the 30 % project failures at Company XYZ and develop an intervention that will reduce project failures.

Background of the Organization

The Company is a technology services company, engaging in the design and delivery of information technology (IT) enabled business solutions. The company provides various services which include consulting, design, custom application development, software reengineering, maintenance, production support, systems integration, package evaluation and implementation, testing services, operations and business process consulting, engineering services, and infrastructure management services. In addition, the company also offers software products to the banking industry, business process management services, such as offsite customer relationship management, finance and sales order processing. The company serves clients in financial services, manufacturing, telecommunications, retail, utilities, logistics, and other industries in North America, Europe, and the Asia-Pacific region.

The Problem

In year 2005, the projects that were completed at the Company had a 30 % failure rate. The measures that were used to determine the success rate were budget, schedule, objectives of the project, business satisfaction, project manager's capabilities and sponsor involvement in projects. As an organizational goal management wants to increase the project success rate by 25 % in 2006 - 2007. In order to achieve the goal, the organization needs to identify the root causes of the failure and take corrective actions for future projects.

History of the problem. The Company completed 220 projects in 2005. However, 66 projects failed to live up to the established expectations of the business customers. In 2005, 40 of the 66 failed projects were Tier A projects for the company. Tier A projects are those with information technology (IT) budget greater than \$ 500 K. The root cause of project failure must be addressed to ensure future projects are successfully completed.

The problem statement. Company XYZ is experiencing 30 % rate of project failures. The purpose of this action research project is to discover root causes for the 30 % project failure.

Literature Review

The Standish Group Chaos Report (2003), a study of over 13,000 projects, shows project success rates have increased over the past 10 years, but still shows that two out of three projects are not successful. The Chaos report shows only 34 % of projects meet all the criteria for a successful project. Challenged projects, those that only met a few project success criteria measurements, contributed to 51 % of the projects. Failed projects, those meeting none of the project success criteria, contributed to 15 % of the projects. As with other research reports, it is safe to assume that today's IT project successes rate is 28 to 35 % (Sommer, 2004).

A survey of 70 professional engineers conducted by Black (1996) suggests that “there are at least a dozen distinct explanations for project failure” (p.21). In the survey, the engineer-respondents were presented with 70 postulated reasons for project failure. The respondents were asked to rate each prospective reason by its importance as a cause of failure, and to select the five most important reasons. An open-ended portion of the survey allowed each respondent an opportunity to provide additional reasons for project failure. After assimilating and aggregating the results, Black determined that there are at least 12 different general possible causes of project failure (Black, 1996).

Planning. The most important key to a project’s success may be planning. While it is unlikely that project planners have knowledge of all activities and resources needed to effect successful project operations, it is imperative that they understand as much about the project goals and objectives as possible before project launch. In the survey of engineers conducted by Black (1996), the number 1 rated reason for project failure was “the project was not adequately defined at the beginning” (p.21). Project planning can be improved by involving key players up-front. Project team members, along with representatives from upper-level management, finance, purchasing, vendors and contractors, clients, and others should all be part of the project planning process.

Change. Change is a major cause of project failure. Project specifications can be changed for several reasons: initial planning was not complete or thorough; upper-level management changes the scope of the work; the client changes the scope of the work; unforeseen difficulties arose; and financial problems. In the survey conducted by Black (1996), two of the top ten reasons listed for project failure were “too many project changes” and “the scope of the project changes during the project” (p.22).

The Project Manager. Another possible cause of project failure is the project manager. A project manager who helps steer the project in a timely fashion and provides sound, inspiring leadership can go a long way toward bring about successful project. In Black's (1996) survey "an incompetent project manager" (p.22) was the second most important reason given for project failure.

Scheduling. Scheduling is a key variable in the success of a project. Failure to meet the project schedule can result in increased costs because of equipment and human resource downtime, inflated values of raw materials and supplies, poor morale, lack of coordination of subcontractors, and lost opportunities. Further in Black's (1996) survey, three of the top 15 reasons for project failure were related to scheduling. These included "overly optimistic deadlines", "the project attempted to accomplish too much in too short a time frame", and "the project schedule was not followed" (p.22).

Management Support. Another of the top reasons for project failure mentioned in Black's (1996) survey was the lack of support and involvement of top management. Upper-level management should make it clear within the company culture that the project is worthwhile and that they support it. The role of upper-level management in a project is not to be the project manager, but to be a sponsor and facilitator of the project (Black, 1996).

Funding. Improper funding can be a cause of project failure. Appropriate funding levels should always be determined at the planning stage of the project. Failure to provide adequate funding resources will make it difficult to meet project objectives and satisfy customer (internal or external) (Black, 1996).

Cost Containment. Failure to contain costs can also cause project failure. Funding projections for a proposed project might be adequate, but if project costs escalate beyond initial

estimations, the project can still be derailed. Failure to contain costs often occurs because of changes made in scope of the project after it is under way. The inclusion of company purchasing agents in project planning can be helpful in developing realistic goals (Black, 1996).

Resources. A project may be doomed to failure if inadequate non-funding resources are allocated to the project. Resources – human as well as equipment and facilities – are usually determined at the project planning phase. Insufficient or ill-fitting equipment or inadequate facilities can sidetrack a project, causing a drain on the time and energy of the project team. A representative from human resources could be included in project planning so that there is an optimal assignment of people of tasks (Black, 1996).

Information Management. Another source of potential failure is poor information management. Information management can consist of anything from a flow of memos to high-end project management software. The transference and communication of cost, schedule, inventory, and feedback information is vital to a project's life. Black's (1996) survey respondents suggested that project failure can be caused by "lack of quality feedback" and "poor coordination with vendors" (p.24). Each of these could be improved through better information management.

Incentives. Some engineers in Black's (1996) survey felt that project failure can be traced to the failure to utilize penalties and rewards as motivation for the successful completion of tasks. If project team members, subcontractors, vendors, and other project players don't have hard incentives to complete their tasks on time and within budget, they may find other tasks and projects that are more pressing or more rewarding (Black, 1996).

Risk Analysis. Failure to properly assess the risk of the project and evaluate the project sponsor's and project manager's propensity toward that risk can doom the project. Risk analysis

should be an essential part of the planning process. An important early step is to examine the risks along with the potential benefits before determining whether to continue on or to terminate the project (Black, 1996).

Other reasons. A few other reasons for project failure were postulated by engineers in the survey conducted by Black (1996). One of these was “failure of suppliers to meet their commitment” (p.24). The commitment and reliability of a supplier is a serious concern, especially in the present-day continuous quality improvement environment. The supplier is a project team member and needs to understand the importance of timely deliverables. Other reasons given by respondents of Black’s (1996) survey for project failure were “government interference”, “inability to assess community reaction to the project ahead of time” (p.24).

According to Black (1996), there are many different, seemingly independent causes of project failure. However, as one studies the entire spectrum, it becomes clear that many of these causes are actually interwoven and dependent. Changing the projects scope not only affects cost, but it also affects schedules and resource allocation. Ineffective project managers or poor information systems can result in slipped schedules, increased cost, and dissatisfied team members. One major recommendation of this study is that the various stakeholders’ of the project be included in a very thorough planning process, thereby maximizing the input from the various vested interests and broadening the understanding of the project manager and team members. If realistic goals and objectives are set in the beginning, increased costs, missed schedules, the assignment of inappropriate or substandard resources, and changes can be minimized or overcome, resulting in success rather than failure (Black, 1996).

Entering and Contracting

Support for this project was given by the Director of Projects at the Company. The Director was of the opinion that conducting research on project failures at the company would be beneficial considering the number of projects the company has to complete in 2006 – 2007. I was asked to provide a problem statement and brief description of the research topic. The statement was submitted to the Chief Information Officer (CIO) and the Program Management Office (PMO). The problem statement was accepted and the project was given approval to move forward.

The collaborative team. To facilitate the process a collaborative team was formed and approved by the Director. Members of the team are representatives who are either currently involved in project work, or have worked as a project manager or as part of a project team at some stage in their career. The proposed team members are - Business Sponsor (2), Program Manager (1), Project Manager (3), Project Team Member (2).

I am responsible for researching the problem, creating data gathering instruments, analysis of the data collected, and write up of the project. I am also responsible for keeping all other team members informed of my process, obtaining approval wherever required, and collecting input from all team members.

The Business Sponsor pays weekly attention to team progress, approves deliverables and escalates issues, keeps Steering Committee, Stakeholders & Executive Sponsors updated. The Business Sponsors are also decision-makers for first-level escalations, and provides approval to scope and changes to scope.

The Program Manager captures and manages program issues, identifies program and cross project risks, develops and manages program timeline, coordinates with program managers from other assets, acts as escalation point and resolves issues.

The Project Manager is responsible for project planning and communications, management of change, project sub-team leads management, project administration, project tools, travel coordination, project team management, core day to day project management, resource management, issue management, project schedule and task management, risk management, implementation and contingency management, communication with Program and Project Management Office (PMO).

The Project Team members are responsible for a series of activities including but not limited to analysis, design, construction, testing, implementation and warranty, identify and manage issues, work/communication with program and project counter parts, lead technical & business process/model change, contributes to project plan, issues management, risk management.

Concerns. In order to get to the bottom of the causes for project failures it is important to ensure that the responses to the questionnaire remained confidential. In order to ensure confidentiality, the survey will ask only for the role in the project (Program Manager, Project Manager etc...); the respondent's name will remain confidential and will not be part of the data presented. Management did not want any internal pressure be applied to the team members while responding to the questionnaire.

Method

Action Research (AR)

Definition. According to Cummings and Worley (2005), “action research focuses on planned change as a cyclical process in which initial research about the organization provides information to guide subsequent actions. The results of the action are then studied and assessed to provide information to guide further actions” (p.24). Coghlan and Brannick (2005) further defined action research as: (a) Research in action, as opposed to research about action, (b) A collaborative, democratic process pioneered by Kurt Lewin in the late 40’s, (c) A sequence of events and approach to problem solving, (d) A 4-step process of diagnosing, action planning, taking action & evaluating action (p.4). According to Lewin (1946), research needs to be closely linked to action if organization members are to use it to manage change (Cummings & Worley, 2005, p.8).

Rationale. At Company XYZ many projects fail to live up to the established expectations. Some projects fail to achieve the schedule or budget goals or fail to deliver everything that was initially promised. Few projects just fail altogether. The problem facing the Company is a 30 % rate of project failure. The process of consciously analyzing past project failures should help the Company avoid or at least contain project failure by effective project management. After doing research on the root causes for project failure, evaluating what is found, and then using the information for further planning provide a sound, supportable and defensible study of the problem and identification of possible solutions. There should be a greater chance of acceptance and buy-in by the CIO, PMO, Director of Projects, Program and Project Managers who have limited information regarding reasons for project failures. Using action research to define the root causes for 30 % project failure should address the needs of the

company for sound completion of projects in 2006 – 2007 and meet the organizational goals of reducing project failures.

Action research model. This action research project will employ the action research model as suggested by Cummings and Worley (2005). The eight steps as outlined by Cummings and Worley (2005) are:

Step #	Activity
Step 1	Problem identification
Step 2	Consultation with behavioral science expert
Step 3	Data gathering and preliminary diagnosis
Step 4	Feedback to a key client or group
Step 5	Joint diagnosis of the problem
Step 6	Joint action planning
Step 7	Action
Step 8	Data gathering after action

This research model focuses on planned change as a cyclical process in which initial research about the organization provides information to guide subsequent action. The results of the action are assessed to provide further information to guide further action. This iterative cycle of research and action involves considerable collaboration amongst the collaborative team members (Business Sponsor, Program Manager, Project Manager, and Project Team Members) and me. I will be using this research model since the model places heavy emphasis on data

gathering and diagnosis prior to action planning and implementation which will be important to identify root causes of the project failures.

The first step is to identify the problem. The Director of Projects has identified that there was a 30 % project failure rate in 2005 which is a cause of concern considering the number of projects the company has to complete in 2006 – 2007.

The second step will be a discussion / consultation with the collaborative team members. During this step, I will have to establish an open and collaborative atmosphere with the team members to gain their support in this research. Additional involvement will generate good rapport and reduce or eliminate feelings of suspicion.

The third step will be data gathering and preliminary diagnosis. During this step I will gather appropriate information and analyze it to determine the underlying causes of project failure. The data gathering will be conducted using one-on-one interviews with each member of the collaborative team, questionnaires, and secondary data sources.

The fourth step will be to provide feedback to the Director, PMO, Program Manager, and the Project Manager on the data collected. I will analyze all relevant and useful data that is gathered.

In the Fifth Step, a joint diagnosis of why projects failed in 2005 will be carried out and discussed with the Director, PMO, Program Manager, and the Project Manager.

Step six will help determine interventions that will try to eliminate some of the causes of project failure. The team will recommend the most appropriate solution for successful project completion.

Step seven, is to plan and implement the changes selected. During this step new methods and procedures will be implemented over a period of six months.

The final step in the model is to evaluate the changes made. Since action research is a cyclical process, data must be gathered after the new methods and procedures are implemented. This analysis will document the perceptions of the team members and determine the effects of the newly implemented procedures and feed it back to the organization. Ideally, this process will help generate a continuous cycle of improvements as the team identifies additional improvements through review and analysis.

Validity

Nadler (1977) found that:

Validity refers to the soundness and accuracy of a research study. For research to be valid, researchers must observe, identify, or measure what they say they are observing, identifying, or measuring. Furthermore, the data collected must be accurate, reliable and complete in order to be valid. (p.105)

In this research it will be vital to get internal validity since the question centers on the company's ability to avoid 30 % of the project failures. Internal validity is concerned with the accuracy of the conclusions drawn from the research as determined by its design and content. In order to enhance internal validity I will work with the Business Sponsor, Program Manager, Project Manager, and Project Team Members. One-on-One interviews, Questionnaires and Secondary Data sources will be collected. The use of multiple data sources will ensure that data collected is accurate and will help identify the various reasons for the 30 % project failure rate. Also, the use of multiple data sources will ensure that there is no influence or pressure on any one of the team member.

Triangulation. Triangulation is a method used to check and establish validity of data gathering methods. Method testing, Data Source testing and Analyst testing are three types of

triangulation (Cunningham, 1993). In this action research Methodological Triangulation will be used. The methodological triangulation will use a combination of qualitative (interviews) and quantitative (questionnaires) data. The methodological triangulation criteria will be met since the data gathered will be similar.

Data Gathering Methods

According to Nadler (1977), “data-based methods are essentially tools which change agents or managers can use to learn about and improve organizations”(p.118). There are a number of techniques and methods that are used for data gathering. These include interviews, questionnaires, observation, and unobtrusive measures (sometimes referred to as Secondary data). The type of data collection method used should be based on the type of information or data that is being collected. Each data collection method has its advantages and its disadvantages. However, it is important to use a variety of data-gathering methods to balance and ensure the reliability of the data being collected. Three methods of gathering data will be used for this project: Interviews, Questionnaires, and Secondary Data Sources.

Interviews. According to Nadler (1977), “interviews are empathic devices that, if properly conducted, can generate responses that participants might otherwise choose not to include” (p.122). The members of the collaborative team (Business Sponsor, Program Manager, Project Manager, and Project Team Members) are valuable sources of data on how they feel the company is completing the projects. The team members can comment on how things work at the company, about all the things that are performing well and things that are performing poorly. During one-on-one discussion with each member of the collaborative team, the responses may contain information about the causes of the problem as well as the symptoms. The individual members will be able to explain how projects are completed at the Company. The structured,

open ended interviews with the team members will help build a rapport and can aid in both the information collection and also for future activities. The outcomes of the discussions with each team member will to a certain extent form the basis to create a questionnaire.

Questionnaire. Questionnaires are essentially self-directed interviews. I will be using a set of questions that are created by Michael Greer (Appendix A). I strongly believe that the listed questions are the ones that need to be answered by the team members to get to the root cause of project failures. A set of questions (See Appendix A) will be sent to each team member via the web. Each member will respond to the questions by writing the answers. According to Nadler (1977), “by using the questionnaire direct perceptions, evaluations, and feeling of the team members can be collected” (p.125). The questionnaire will be distributed to few team members to ensure that the questions are understandable. The team members will be asked to provide input and suggestions for improvement. The suggestions will be analyzed for inclusion. Once the questions are defined the cost of administering is very low. The questionnaire will ask only for the role played in the project by the team member, the respondent’s name will remain confidential. I will gather appropriate information and analyze to determine the underlying causes of the project failures.

Secondary Data. The use of secondary data will help gain initial insight into the research problem. According to Nadler (1977), “organizations do an immense amount of data collection during the normal course of activities, and they therefore contain huge (but often hidden) “data banks” (p.137). I will gather the data from the archives with the help of the project team members of the company for the projects completed in the year 2004, 2005. The archives will be valuable source since it will contain various documents, records, and written material about the projects completed. Analysis of the archived documents will provide a detailed outline of how

process works and identify where it breaks down and areas that need to be attended to. It will also provide a baseline of sorts to compare with other data.

Summary and Conclusion

This paper is a proposal for an action research project that will examine the root causes for a 30 % project failure at Company XYZ. This proposal will employ the action research model as suggested by Cummings and Worley (2005). The project will utilize three data gathering techniques - One-on-One interviews, questionnaire survey, and secondary data collection. The eight steps as outlined by Cummings and Worley (2005) when implemented will help identify the root causes for the 30 % project failures and the recommendations made should improve the project completion at the Company in the future.

References

- Black, K (1996). *Causes of project failure: A Survey of Professional Engineers*.
PM Network, 1996, USA, November. Newtown Square, PA: Project Management
Institute.
- Cummings, T.G. & Worley, C. G. (2005). *Organization Development and change*. (8th Ed)
Mason, OH: South-Western Publications
- Cunningham, J. B. (1993). *Action research and organizational development*. Westport, CT:
Praeger Publishers.
- Michael Greer's Project Management Resources (2006). Retrieved September 13, 2006, from
Web Site: <http://www.michaelgreer.com/>
- Nadler, D. A. (1977). *Feedback and organization development: Using data-based methods*.
Reading, MA: Addison-Wesley
- Sommer, D (2004). *Project failure 12 mistakes to avoid PMI Global Congress 2004 --North
America*. Newtown Square, PA: Project Management Institute

Appendix A

Data Gathering Instrument – Questionnaire

Introduction

My name is Santosh Guha, and on behalf of Company XYZ, I am putting together a proposal with appropriate recommendations to ensure successful completion of projects in 2006-2007. This research has been approved by the Director – Projects. The results of the research and the recommendations will be presented to the CIO, PMO, Director – Projects, Business Sponsor, Program Manager, Project Manager, and Project Team Members). The responses to the questionnaire will remain confidential. The management in no way encourages any internal pressure be applied to the team members while responding to the questions. Considering the number of projects to be completed in 2006-2007, the responses, however, will be used within the company to formulate appropriate recommendations for improvement and to ensure successful completion of the projects. Thank you for your participation. Your time is appreciated.

About you

What is your role within the project? (Business Sponsor, Program Manager, Project Manager, and Project Team Members)

How long are you in this position?

Questions

Greer, 2004 (cited in “Michael Greer’s Project Management Resources”, 2006).

1. Are you proud of your finished deliverables (project work products)? If yes, what's so good about them? If no, what's wrong with them?
2. What was the single most frustrating part of your project?

3. How would you do things differently next time to avoid this frustration?
4. What was the most gratifying or professionally satisfying part of the project?
5. Which of the methods or processes worked particularly well?
6. Which of the methods or processes were difficult or frustrating to use?
7. Given an opportunity to change anything about the project, what would you change?
8. Did the stakeholders, senior managers, customers, and sponsor(s) participate effectively? If not, how could we improve their participation?
9. Did the analysis phase identify all the project deliverables that we eventually had to build? If not, how can we be sure our future analyses don't miss such items?
10. Did the analysis phase identify unnecessary deliverables? If so, how can we be sure our future analyses don't make this mistake?
11. How could we have improved our analysis phase?
12. How accurate were our original estimates of the size and effort of our project? What did we over or under estimate? (Consider deliverables, work effort, materials required, etc.)
13. How could we have improved our estimate of size and effort so that it was more accurate?
14. Did we have the right people assigned to all project roles? (Consider subject matter expertise, technical contributions, management, review and approval, and other key roles) If no, how can we make sure that we get the right people next time?
15. Describe any early warning signs of problems that occurred later in the project? How should we have reacted to these signs? How can we be sure to notice these early warning signs next time?

16. Were our constraints, limitations, and requirements made clear to the stakeholders from the beginning?
17. Were there any difficulties negotiating the vendor contract? How could these have been avoided?
18. Were there any difficulties setting up vendor paperwork (purchase orders, contracts, etc.) or getting the vendor started? How could these have been avoided?
19. List team members or stakeholders who were missing from the kickoff meeting or who were not involved early enough in our project. How can we avoid these oversights in the future?
20. Were all team/stakeholder roles and responsibilities clearly delineated and communicated? If not, how could we have improved these?
21. Were the deliverables specifications, milestones, and specific schedule elements/dates clearly communicated? If not, how could we improve this?
22. Were you satisfied with the detailed design specifications? If not, how could we have improved these?
23. Did all the important project players have creative input into the creation of the design specifications? If not, who were we missing and how can we assure their involvement next time?
24. Did those who reviewed the design specifications provide timely and meaningful input? If not, how could we have improved their involvement and the quality of their contributions?
25. How could we have improved our work process for creating deliverables specifications?
26. Were the members of our test audience truly representative of our target audience? If not, how could we assure better representation in the future?
27. Did the test facilities, equipment, materials, and support people help to make the test an accurate representation of how the deliverables will be used in the "real world?" If not, how could we have improved on these items?

28. Did we get timely, high-quality feedback about how we might improve our deliverables? If not, how could we get better feedback in the future?

29. Was our implementation strategy accurate and effective? How could we improve this strategy?

30. Did our hand-off of deliverables to the user/customer/sponsor represent a smooth and easy transition? If not, how could we have improved this process?

Question 1

Discuss the different leadership styles, the factors a project manager must consider in selecting an appropriate management style for a given project team. What's the relationship between a project manager's leadership style, project success and project types.

Abstract

In an organization a project manager needs to display a leadership style based on the project team members. This paper discusses the different leadership styles and factors a project manager must consider in selecting an appropriate management style for a given project team. In addition, this paper discusses the importance of matching the project manager's leadership style to project type and how leadership style plays a role in the success of a project.

Leadership

Leadership is a key ingredient for the success of an organization, project, sports team or for the economic growth of a country. In terms of organizational success the shareholders and the employees look upon the Chief Executive Officer as the leader to lay down the strategy, goals, and vision of the company. Many authors have tried to define leadership; however, leadership is something that cannot be defined easily. I consider the leader to be the captain of the ship. Many people believe that the definition of leader is someone who climbs to the top making tough decisions and living with the results while carrying the burden of accountability. Others define leaders as people who can inspire their team and coworkers to achieve more than they thought was possible through motivation and trust without actually issuing orders. No matter how leadership is defined, leadership makes things happen. Leadership makes people act and produce results (Saladis, 2003).

The Project Management Institute defines leadership as establishing direction by developing a vision of the future and the strategies to achieve that vision, aligning people through communication by words and deeds, and motivating and inspiring by energizing and helping people to overcome barriers to change (PMI, 2004).

The potential factors that a project manager must consider in selecting an appropriate management style depend on the personalities of the team members - the concept of one-size-fits-all is not valid. Moreover, using an inappropriate leadership style will lead to project failures.

Leadership Styles

In order to become an effective leader it is important to understand the different leadership styles and adapt a leadership style that works best with the team and the organization.

In addition an effective leader needs to be a good communicator and a listener. Leadership style is extremely important and plays a vital role in the success of a project, organization or a sports team. The different leadership styles are:

Autocratic Leadership

In autocratic type of leadership the manager makes the decisions without the consultation of the team members. A project manager using an autocratic leadership style on the team members will definitely lead to project failure. In the interest of the project, and the organization it is best to avoid the autocratic leadership style. Autocratic leadership may be defined as a boss centered leader who holds onto most of the authority and makes most of the decisions alone (Dubrin, 2000, p.116).

Charismatic Leadership

In charismatic leadership the leader exhibits exceptional personal qualities and has extraordinary accomplishments that separate the individual from rest of the team. Max Weber described the leader as:

Set apart from ordinary men and treated as endowed with...
exceptional powers and qualities... which are not accessible to the
ordinary person but are regarded as of divine origin or as
exemplary, and on the basis of them the individual concerned is
treated as a leader. (Menkes, 2006, p.163)

Further, Nadler and Tushman (1990) attempted to develop a description of the charismatic leader in terms of patterns of behavior exhibited by the leader (Appendix 1).

Democratic Leadership or Participative Leadership

In order for a project to be successful, participative leadership is the most effective style that a project manager may use. The leader and the team member's respect, and support each others inputs. The leader and the members of the project work as a team with a common goal and vision. According to a Goleman, Boyatzis, and McKee (2002), "the leader values people's input and gets commitment through participation and share decision making. The leader has a positive impact on the team and is appropriate to build buy-in or consensus, or get valuable input from employees" (p.55).

Servant Leadership

A leader who takes care of others needs ahead of personal needs, but at the same time ensures that the goals of the organization are met is termed a servant leader. According to Greenleaf (1970):

The servant-leader is servant first... It begins with the natural feeling that one wants to serve, to serve first. Then conscious choice brings one to aspire to lead. He or she is sharply different from the person who is leader first, perhaps because of the need to assuage an unusual power drive or to acquire material possessions. For such it will be a later choice to serve – after leadership is established. (quoted in "Servant Leadership", 2006)

Task-Oriented and Relationship Motivated Leadership

Task-Oriented leaders are focused on the task at hand. The leader is concerned about reaching the goal. For task-oriented leadership to be successful the leader and the team members need to share a good relation, and there need to be a clear understanding about the tasks assigned to the team members. On the other hand, in Relationship Motivated Leadership the leader

focuses on developing an interpersonal relation with the team members. The leader needs to ensure that the focus on the project objectives is not lost in developing interpersonal relations.

Transformational Leadership

As the name implies transformational leadership deals with a transformation process i.e. transformation of an individual into a leader. In transformational leadership the leader plays a role of motivating the team to achieve more than what is expected from the team. According to Northouse (2004), “Transformational theory speaks about emotions, values, ethics, standards, long term goals, and includes assessing follower’s goals, fulfilling their needs and treating them as human beings”(p.169).

Transactional Leadership

In transactional leadership a transaction or exchange takes place between the leader and the follower. For example, when a milestone is achieved by an individual on a project the project manager (leader) rewards the individual for achieving the milestone. In the above example a transaction has taken place in terms of the individual (follower) completing the task and the project manager (leader) rewarding the follower. Based on the performances of the follower the leader rewards the follower (Bass, 1985).

Situational Leadership

A leader who makes amends to ones leadership style based on the given situation is demonstrating situational leadership. Blanchard and Hersey (1969) state that, “managers must use different leadership styles depending on the situation” (p.88). Further, Blanchard and Hersey characterize leadership style in terms of the amount of direction and of support that the leader gives to his or her followers (Appendix 2)

Laissez-faire Leadership

A leader who does not demonstrate any leadership qualities with the team and does not communicate with the team is exhibiting a Laissez-faire Leadership style. There is no feedback mechanism between the leader and the followers and no vision or motivation is provided to the team members.

Project Management Leadership Styles

The role of a project manager as a leader is of the one key differentiating factor between the success and failure of a project. To be a successful leader a project manager needs to have certain key attributes. It is my belief that communication is one of the top most attributes necessary to succeed as a leader. In addition to communication skills, the leadership style used by the project manager is a critical attribute. At the same time it is important to note that different leadership styles needs to be used during various phases of a project (Turner & Muller, 2005). In a multi-cultural environment the leader needs to be sensitive towards the team's culture and select an appropriate leadership style. Leadership style also depends on the type of industry. For example, an individual may use autocratic leadership style in the construction industry because of the number of people and contractors the project manager needs to work with. Whereas in a software implementation project, a project manager may select participative leadership style due to the fact that the project manager (leader) and the team member's need to respect, and support each others input.

Project Life Cycle

Depending on the phase of the project a project manager needs to use a suitable leadership style (Frame, 1987). The leadership style needs to vary depending on the analysis, design, construction, testing, implementation, and closeout phase of the project (Appendix 3).

Managing global projects

Managing global projects for a project manager becomes much more tedious because of the multi-cultural and virtual environment of the team members. The project manager needs to be sensitive toward the various cultures of the team and respect the same. In managing global projects the leader needs to develop an inter-personal relation with the team. Hence, relationship motivated leadership is an appropriate leadership style for the project manager.

Work environment

As a leader the project manager needs to ensure that there is harmony within the team. The team members need to respect each others views. The project manager has to manage internal conflicts and make sure that the project goals are met without the team getting distracted. The work environment is an important factor for the success of the project and it is the responsibility of the project manager to maintain a healthy team and work environment (Turner & Muller, 2005).

Task-versus-People Focus

I strongly believe that a project manager needs to balance task-oriented and people-oriented leadership. I have worked with project managers who focus on getting the tasks completed without maintaining a work-life balance. In the long run the project has a negative impact in terms of the quality of the product delivered. At the same time a project manager needs to make sure that much time is not spent on developing inter-personal relationships and lose site of the project deliverables.

Leadership Style and Perception of Success

A project manager's individual attributes (personality, motivation) and competencies (problem-solving skills, knowledge) play a significant role in the project success. The

confidence and self-belief of the project manager plays an important role in ensuring that the project would be delivered on schedule and within budget.

When a new Chief Executive Officer is appointed as a leader of an organization it has been my personal experience that he or she usually spends the first 90 days on the job understanding how things work at the company and learning about the personalities on the leadership team. Similarly, in the case of a project manager working with new team members it is very essential to spend a short period of time to understand the personality of each team member. It is important to understand how each individual works in a group environment. One method is to conduct a personality test using the Myers-Briggs Type Indicator (MBTI). Once the dynamics of the team are understood, the project manager will need to develop a suitable leadership style (Wegryn, 2004).

Wegryn (2004) contends that leadership styles for all project managers can be put into three general categories: (a) strong visible project manager, (b) strong silent project manager, and (c) the team member project manager.

When an organization outsources a project to multiple vendors it becomes a challenge for the project manager to maintain the synergy between team members who belong to various contractors. The project manager needs to ensure that the team is not confused with the project deliverables and that when a deliverable date slips the team does not start pointing fingers at each other. A strong visible project manager takes the sole responsibility to ensure there is harmony within the team and that the focus on the project deliverables is not lost. A strong visible project manager creates an environment where the team members can work together (Wegryn, 2004).

I have been part of a project team where the project manager was a good communicator, motivator and had excellent leadership skills. The project manager ensured that the team met all

commitments and the team members supported each other. However, the project manager lacked technical knowledge. But the team had resources with a strong technical background and personalities who felt like they are in control and influencing the project team. If the discussions got too technical, the project manager would involve the experts or most knowledgeable resources on the topic. This type of leadership where the project manager allows experts to drive the team is called strong silent project manager (Wegryn, 2004).

The team member project manager as the name suggests is part of the team and plays the role of a project coordinator. The project manager is confident about the resources on the team, the team's ability to deliver on schedule, within budget and hit the committed milestone. This style of leadership is required when the project team needs simply a project coordinator to set up meetings, record events, schedule meetings, develop project plans, and monitor team's efforts (Wegryn, 2004).

Selecting a Leadership Style for Project Team success

The project manager needs to ensure that the team is motivated over the life cycle of the project. However during the execution phase motivation is a critical factor as there are increased uncertainty and conflicts during the execution phase. It is inappropriate for a project manager to start managing a project with a pre-set/pre-determined leadership style. In most cases a pre-set/pre-determined leadership style would result in project failure. A suitable leadership style needs to be tailored based on the understanding of the characteristics of the project, the personalities of the team members, and the environment in which the project is being executed. Selecting an appropriate leadership style is critical for the success of a project (Martin and Wysocki, 1990).

Leadership Style. The success of a project depends on the relation between the team members and the project manager. At the same time the relationship between the team members and the project manager depends on the manager's leadership style. The manager's leadership style can be classified into theory –X and theory –Y. In theory X the team members need to be pushed / forced to get the work done. The team members have to be threatened of punishment if the organizational goals are not met. Thus theory –X is more of a authoritative leadership style. On the contrary in theory-Y the team members work with interest and dedication to achieve the organizational goals and objectives. The rewards are directly associated to the objectives. Thus theory-Y is more of a participative leadership style (McGregor, 1960).

Contingency theory is the most widely researched and best validated model in leadership literature. The contingency theory speaks about Style and Situations. The contingency theory tells us how a leader would handle/ react in different contexts and the results may vary from leader to leader. An individual might perform well in a given context but might fail to perform in another given context. In order to identify if the leader is task motivated or relationship motivated, Fiedler developed the Least Preferred Coworker (LPC) scale. The leader scoring high on the scale is identified as relationship motivated and if the scores are low then is identified as task motivated. The contingency model is analyzed by assessing three factors: Leader-Member Relations (LMR), Task Structure and Position Power (Martin and Wyszocki, 1990).

As the name suggests the leader- member relations measures the relationship between the leader and the team members. LMR measures how well the leader gets along with the team members. The task structure measures how clearly the tasks are defined to be accomplished. In Position Power the leader utilizes power to ensure that the tasks are completed by the team

members. Martin and Wysocki (1990) demonstrated the application of two leadership styles to eight different project environments (Appendix 4). The eight environments are developed from considering each of the three levels as being either at a high or low level, good or bad relations between leader and team members, task clarity or ambiguity, and the presence or absence of position power.

Conclusion

In today's work environment, it is important for a person to realize the importance of an individual's role as a leader. In an organization the leader is the essential element for a team's success or failure. After the leader (project manager) has spent some time understanding the personalities of the team members a suitable leadership style may be used for the success of the project. It is important to note that a leadership style used in project 'A' may not work on project 'B'. Project managers need to change their leadership style to match the needs of the team and the project throughout the life-span of the project. Hence, the concept of one size fits all will not be applicable in selecting a leadership style.

References

- Bass, B.M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.
- Blanchard, K., Blanchard, M., Blanchard, S., Carew, D. & Carew, E.P. (2006). *Leading at a higher level*. Pearson Education, New Jersey.
- Boyatzis, R., Goleman, D. & McKee, A. (2002). *Primal leadership: Learning to Lead with Emotional Intelligence*. Harvard Business School Publishing, Boston, Massachusetts.
- Dubrin, J.A. (2000). *The complete idiots guide to leadership*. Penguin group, New York.
- Frame, J.D. (1987). *Managing projects in organizations*. San Francisco: Jossey Bass.
- Martin, D.M., & Wysocki, J. (1990). Selecting a leadership style for project team success. *Proceedings of the Project Management Institute Annual Seminars and Symposium*. Newtown Square, PA: Project Management Institute.
- McGregor, D (1960). *The human side of enterprise*. McGraw-Hill book Company, Inc., New York.
- Menkes, J. (2006). *Executive intelligence*. What all great leaders have. Harper Collins Publishers, New York.
- Nadler, D A and Tushman M L (1990). *Beyond the charismatic Leader: Leadership and Organizational Change*. California Management Review Reprint Series, Volume 32, Number 2.
- Northhouse, P. (2004). *Leadership: Theory and practice*. Thousand Oaks: Sage Publications.
- Project Management Institute (2004). *A guide to the project management body of knowledge*, (3rd ed). Newtown Square, PA: Project Management Institute.
- Servant leadership (2006). Retrieved November 7, 2006 from

<http://www.greenleaf.org/leadership/servant-leadership/What-is-Servant-Leadership.html>

Turner, R J., & Muller, R. (2005). The project manager's leadership style as a success factor on projects: A literature review. *Project Management Journal*, 36(2).

Wegryn, K. (2004). *Project management leadership styles*. Retrieved November 5, 2006.

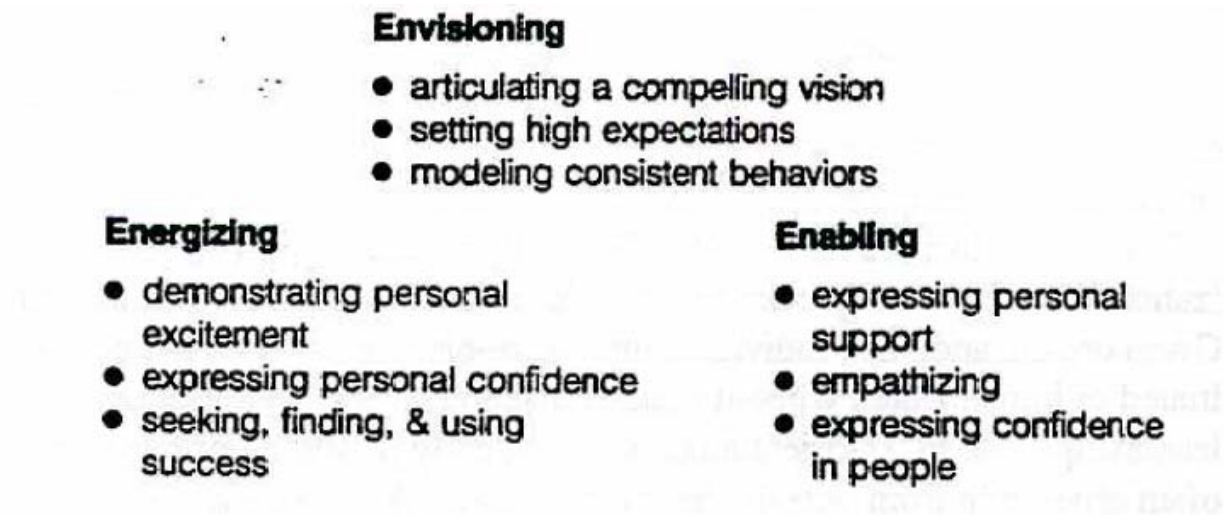
from

<http://www.allpm.com/modules.php?op=modload&name=News&file=article&sid=926>

Appendix 1

Figure 1 represents the behavior of charismatic leader as stated by Nadler and Tushman (1990)

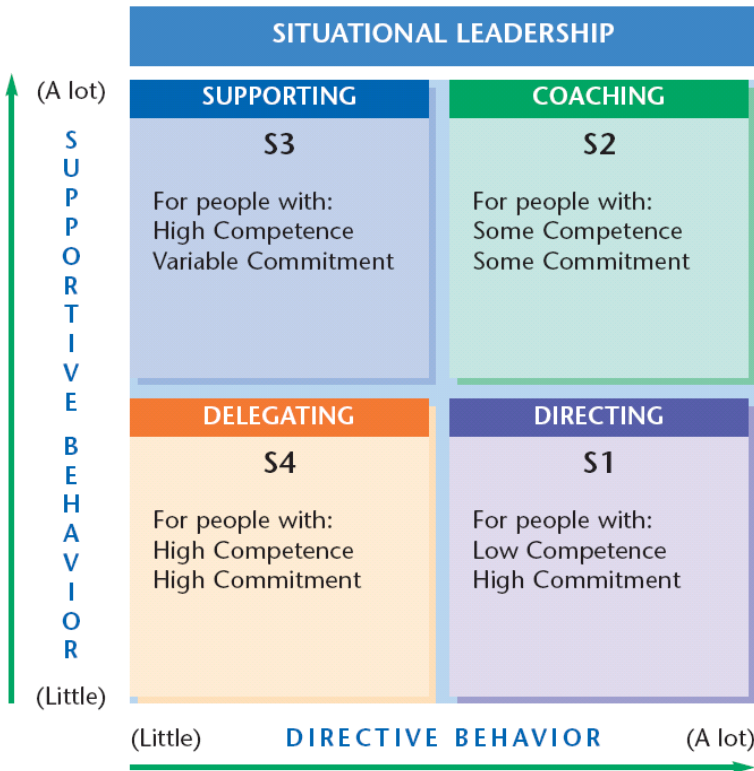
Nadler, D A and Tushman M L (1990).



Appendix 2

Figure 2 represents the leadership grid by Blanchard and Hersey (1969)

Blanchard, K., Blanchard, M., Blanchard, S., Carew, D. & Carew, E.P. (2006).



Appendix 3

Figure 3 represents Leadership Styles, Project Team Types, and the Project Life Cycle

Turner, R J., & Muller, R. (2005).

Leadership Style	Stage	Team Type	Team Nature
Laissez-faire	Feasibility	Egoless	Experts with shared responsibility
Democratic	Design	Matrix	Mixed discipline working on several tasks
Autocratic	Execution	Task	Single discipline working on separate tasks
Bureaucratic	Close-out	Surgical	Mixed working on a single task

Appendix 4

Figure 4 represents the integration of environmental and motivational factors determining leadership style

Martin, D.M., & Wysocki, J. (1990).

Characteristics of the Situation			Team member experience	Appropriate leadership style
Leader-member relations	Environment or task structure	Position power		
good	stable/clear	strong	clearly directed, clear role relationships exist, it is not necessary to use position power as group supports and knows goals	leader focuses on task completion and monitors macro environment for possible problems
good	stable/clear	weak		
good	unstable/unclear	strong	clear role relationships, but unclear direction, may wish to share their views on goals and participate in the goal setting	relationship focused style uses members' communication to help structure tasks and direct motivation
good	unstable/unclear	weak		
bad	stable/clear	strong	team members know task but find roles confusing creating problems in communication, coordination and integration of work	relationship style resolves conflict/opens communication to increase coordination, power used to align troublesome team members
bad	stable/clear	weak		
bad	unstable/unclear	strong	relative chaos, team needs guidance in task and in establishing the proper roles toward one another	task focused leader uses power to structure tasks and delegate roles, w/o power must rely on own self and charisma
bad	unstable/unclear	weak		

Question 2

Discuss the definitions of quality, as well as the different perspectives that various groups within an organization might have about quality. What is the role of quality from a project management perspective? Discuss some of the Quality Techniques and Concepts applicable to project management.

Abstract

Quality is critical to organizational and project success. This paper discusses the definitions of quality and the different perspectives that various groups within an organization might have about quality. An analysis is performed regarding the role of quality from a project management perspective. Finally, some of the quality techniques and concepts are discussed.

Quality

Quality is key to organizational and project success. In a given contract that runs thousands of pages long, Quality Management may appear as a relatively small component of the contract. While Quality Management may be short in terms of text in a contract, Quality is one of the key differentiators for organizations to win projects against top competitors. Quality Management in the 21st century has become part of the organizations Mission, Vision, Policy, and Objectives. Because of the many options available to the consumers/ customers, the consumers / customers are not willing to compromise on quality. The consumers/customers are willing to pay higher prices for products as long as the quality is not compromising factor.

Quality is a continuous ongoing improvement process. In order to achieve customer satisfaction it is important for organizations to implement appropriate quality standards and follow best quality practices. The quality standards that are implemented must be measured at regular intervals against pre-defined quality metrics defined by the organization or against industry defined standards. Following appropriate quality policies/ standards and measuring against metrics will ensure that the organization meets its quality objectives and ultimately achieves total customer satisfaction.

What is Quality?

The word 'Quality' sounds a simple term but in reality is much more complicated and difficult to define. Each individual may have a different perspective to Quality and may have an own definition. Different authors and quality gurus have defined what Quality meant to them. According to Ishikawa (1985), "to practice quality control is to develop, design, produce, and service a quality product, which is most economical, most useful, and always satisfactory to the consumer" (p. 44); Juran (1979), "Quality is fitness for use "(p. 2); Crosby, "Quality means

conformance to requirements” (p. 15); Broh, “Quality is the degree of excellence at an acceptable price and the control of variability at an acceptable cost” (p.3); Hutchins (2000), “Quality is the real and perceived value in a project, product, or service as realized by a customer or user” (p.48); Costs go down and productivity goes up, as improvement of quality is accomplished by better management of design, engineering, testing and by improvement of processes. Better quality at lower price has a chance to capture a market. Cutting costs without improvement of quality is futile (Deming, 1988). However, in my terms Quality can be defined as meeting the pre-defined quality metrics by using an industry defined quality standard and achieving customer satisfaction

Multiple Perspectives of Quality

In an organization each department may view the definition of Quality in a different perspective. In the March 2000 issue of PM Network published by the Project Management Institute (PMI), Hutchins explains the multiple perspectives of Quality. Hutchins (2000) found the following:

The definition of quality has expanded as more organizational team use project and process management to do their critical work. Depending on what a project team is tasked to do, the definition of quality may differ. Quality is commonly defined in terms of the following perspectives: 1) perceived excellence 2) market or customer centric 3) conformance, 4) value-based. Each project team in an organization may interpret the word “quality” differently which affects its implementation. A marketing project team may take a user or customer approach to the subject. Engineering and manufacturing project teams would pursue a conformance approach to the subject. Purchasing project teams may take a value based approach. (p.48)

As a project manager it is important to understand that each functional department uses and defines the term Quality differently. Because of the different perspectives that each of the department might have about Quality, it is critical for a project manager to use the word Quality appropriately depending upon the context of the situation and the team. Many-a-times this could be challenging for a project manager.

Quality from a Project Management Perspective

Quality Management is one of the Project Management Knowledge Areas as defined in the Guide to the Project Management Body of Knowledge (PMBOK Guide, 2004). According to the Project Management Institute (2004), “Project Quality Management includes the processes required to ensure that the project will satisfy the needs for which it was undertaken” (p.95). Knutson (1999) defined Quality Management as, “in order to make the customer happy, we must deliver a quality product or services within the timeframe and budget agreed upon” (p.17). The four major quality management processes are: 1) Quality Planning 2) Quality Control 3) Quality Assurance 4) Quality Improvement (Knutson, 1999, p.17).

Quality Planning. For any given project the first step towards achieving customer satisfaction in terms of Quality is to identify the standards that are relevant to the project and determine how to achieve the defined standards. The process of identifying the standards that are relevant to the project and determining how to satisfy the standards is defined as Quality Planning (PMI, 2004). Quality Planning results in the formation of the Quality management plan. The Quality management plan details how the project team would implement the quality policy and is part of the project plan (Knutson, 1999).

Quality Control. During the Quality Control phase it is important to monitor that the project delivers results that comply with the quality standards as defined during the Quality

Planning phase of the project. Quality Control needs to be performed throughout the life cycle of the project in order to ensure that the causes for unsatisfactory results be eliminated (Knutson, 1999).

Quality Assurance. According to PMBOK Guide (PMI, 2004) Quality assurance is all the planned and systematic activities implemented within the quality system to provide confidence that the project will satisfy the relevant quality standards (p.101). In order to review the Quality management activities a Quality audit needs to be carried. During an audit the lessons learnt are applied to enhance performance of the current project or other projects. An audit may be carried out as per a published scheduled or can be carried out randomly by certified in-house auditors or third party quality organizations (Knutson, 1999).

Quality Improvement. According to the PMBOK Guide (2004), “Quality Improvement includes taking action to increase the effectiveness and efficiencies of the project to provide benefits to the project stakeholders” (p.102). Quality Improvement is an ongoing process that will ensure that there is improvement on an ongoing basis for current project as well as future projects if the lessons learnt are well documented and archived (Knutson, 1999).

Quality Techniques and Concepts

In order to improve the quality of the product or service, many different techniques and concepts have evolved over the years. Some of the techniques and concepts are Statistical Process Control (SPC), Zero Defects, Quality Circles, Total Quality Management (TQM), Quality Management Systems (International Organization for Standardization (ISO) 9000 and others), Continuous Improvement (CI), Six Sigma, Maturity Models - Capability Maturity Model Integration (CMMI), Organizational Project Management Maturity Model (OPM3), and Project Management Maturity Model (PMMM).

Total Quality Management (TQM). According to Briscoe and Pinkas (2002) “TQM is seen as a set of ‘organizationwide’ structured processes chartered to achieving quality goals to meet the organization’s requirements. TQM includes continuous process improvement within it” (p.1). For an organization implementing TQM, it is very important for higher management to support the initiative since all members of the organization participate in improving the processes, products and services to the customer. Considerable amount of employee time is invested to implement a TQM process.

Quality Management System standards. Gladieux (1995), stated that “ISO 9000 standards are good business practices that will improve communications, efficiency, and profits while reducing errors, scrap, and rework” (p.22). Now-a-days it has become important for organizations to get ISO certified. The ISO certification helps and builds confidence in the minds to the customers that appropriate quality standards will be followed by the organization. The three primary quality management issues that most companies are currently addressing for their own specific reasons are TQM, Malcolm Baldrige National Quality Award, and ISO 9000 (Appendix 1) Quality system Standards (Gladieux, 1995, p.22).

Six Sigma. The Six Sigma methodology was initiated by Motorola in 1987. There was a strong belief that the Six Sigma Methodology would be applicable only to manufacturing industries; however the notion changed over a period of time. Companies are now applying Six-Sigma to all the functional departments of the organization. The Six Sigma process uses data and rigorous statistical analysis to identify defects in a process or product, reduce variability, and achieve as close to zero defects as possible (Bott & Fry, 2004, p.4).

The Six Sigma Methodology consists of a five-phase process improvement methodology called the DMAIC (Define, Measure, Analyze, Improve, and Control) (Bott & Fry, 2004, p.4).

Each phase has a set of deliverables as outcome of the respective phases. In order to achieve the deliverables pre-defined tools can be used for each of the phases. By implementing the Six Sigma Methodology the organizations can determine the areas where improvements need to be incorporated. In order to ensure a successful implementation of the Six Sigma Methodology it is important for the organization to invest in training and certifying employees in the methodology.

DMAIC methodology consists of the following five phases:

- Define phase – During the define phase we define the goals / objectives that are in line with the organization objectives.
- Measure phase - During the measure phase we define a baseline measurement for a process so the same can be used for future comparison.
- Analyze phase – During the analyze phase we analyze and determine the root causes of the problem / defect.
- Improve phase – During the improve phase we work towards improving the results by reducing the number of defects.
- Control phase - During the control phase we keep control on future process performance.

Capability Maturity Model Integration (CMMI). The Capability Maturity Model (CMM) was developed in 1984 by the Software Engineering Institute (SEI) at the Carnegie Mellon University in Pittsburgh, Pennsylvania. The CMM addressed the software engineering problems and was widely used by software development organizations worldwide. However, the SEI retired the CMM and introduced a new model called the Capability Maturity Model Integration (CMMI).

The SEI states CMMI as:

A process improvement approach that provides organizations with the essential elements of effective processes. CMMI can be used to guide process improvement across a project, a division, or an entire organization. CMMI helps integrate traditionally separate organizational functions, set process improvement goals and priorities, provide guidance for quality processes, and provide a point of reference for appraising current processes (quoted in “CMMI”, 2007).

CMMI is considered to be a level higher and is more rigid than the CMM. CMMI covers 24 process areas versus CMM’s 18 process areas. In addition, CMMI has 460 practices versus CMM’s 316. In order to ensure that the process improvement takes place in a staged manner, CMMI offers five levels of maturity that can be reached one after the other (Koppensteiner and Swan, 2005).

According to Koppensteiner and Swan (2005):

The CMMI provides a framework for the integration of process improvement for multiple process areas. The process areas are system engineering; software engineering; supplier sourcing and development; an integrated product and process development. Different versions exist depending on how many of the areas are applicable to the organization. CMMI offers two different improvement models for each version; the continuous model and the staged model (p.2).

Continuous Model. Organizations that like to improve its processes one area at a time might likely chose the continuous model. The continuous model applies to specific process improvement achievements for each process area. The maturity is measured by capability levels from zero to five.

Staged Model. Organizations that like to improve their processes across various process areas to reflect a certain maturity are likely to choose the staged model. In the staged model, the overall maturity of the organization is measured by maturity levels from one to five – Initial, Managed, Defined, Quantitatively Managed, and Optimizing (Appendix 2).

Organizational Project Management Maturity Model (OPM3). Beutement and Slankas (2004) state that:

OPM3 is a means to understand and assess the ability of an organization to implement its high-level strategic planning by managing its portfolio or portfolios and then delivering at the tactical level by successfully, consistently, and predictably managing programs and individual projects. OPM3 is also a tool that can help businesses drive improvement in an organization. However, because Project Management Institute (PMI) is, among many things, a standard-setting organization, OPM3 is a standard (p.2).

According to the Project Management Institute the basic Project Management Process Groups identified within the PMBOK Guide are: Initiating Processes, Planning Processes, Executing Processes, Controlling processes and Closing Processes (PMI, 2004). The process groups maybe extended and applied to Program and Portfolio Management. The five process groups within the project, program, and portfolio management interact and progress through the four stages of process improvement. The process improvement stages are Standardize, Measure, Control, and Continuously Improve (Appendix 3). The Best Practices and Capabilities within the OPM3 are mapped to one or more domains and improvement stages (Beutement & Slankas, 2004).

Project Management Maturity Model (PMMM). The Project Management Institute (PMI) published the Project Management Body of Knowledge (PMBOK) in 1996. The PMBOK

speaks about five process groups (Initiating Processes, Planning Processes, Executing Processes, Controlling processes and Closing Processes) and nine knowledge areas that interrelate with each other. There are a total of thirty-seven project management sub-processes and each sub-process is described in terms of its inputs, outputs, and tools and techniques (Fincher & Levin, 1997). The PMMM is created based on the nine project management processes described in the 1996 PMBOK Guide. The PMMM uses concepts that are similar to the CMM by presenting goals to be used to assess an organizations maturity level in project management (Appendix 4). The PMMM, like the CMM, is based on an evolutionary and systematic process improvement approach. PMMM helps organizations to determine where specific key interventions are required to assist in improving project management practices and targeting process improvements (Fincher & Levin, 1997).

Level 1 PMMM organization (Project Quality Management) – In Level 1, specific goals and activities are not described for a PMMM organization. It is assumed that the organizations are operating at Level 1 before the introduction of any project management processes. In Level 1, projects are managed in an ad hoc fashion, and there is no formal project management methodology used. Quality control and quality assurance are outsourced to an external organization. Inspection is the tool used for quality control. Like any project, project overruns and rework are common and expected result of the Level 1 PMMM process (Fincher & Levin, 1997).

Level 2 PMMM organizations (Project Quality Management) – The organization decides on a project management methodology and the same is implemented. The methodology is stabilized by the time the organization reaches PMMM Level 2. The outputs of Level 2 are a project plan, estimates, and project control performance. It is the responsibility of the project

manager to create the project plan, estimates, and the project controls. Best Practices are gathered at the project level. The Level 2 organizations prepare a quality policy. The emphasis in quality management is on the product of the project as quality is considered to be inspected into the project rather than built in. As explained in Level 1, inspection is the tool used in quality control. Inspection will ensure that the customers will help towards a prevention approach to keep errors out of the process. The goal of Project Quality Management in Level 2 is to ensure that noncompliance issues are addressed through quality control inspection and audits if required under a contract (Fincher & Levin, 1997).

Level 3 PMMM organization (Project Quality Management) - The project management practices that are implemented in Level 2 are used by the organization as a whole. Depending on the needs of the organization the methodology is adapted and the best practices are shared across the organization. The organization has quality standards in place, and team members recognize that quality is built into the project, not inspected in. In order to ensure that there is consistency in the activities that are performed tools such as the checklists are used. Quality assurance and quality audits are performed routinely. Trend analysis is used to monitor technical cost, and schedule performance (Fincher & Levin, 1997). According to Fincher & Levin, 1997:

Goals of Level 3 are to define a quality policy and establish quality standards that are agreed by the customer, quality assurance activities are conducted; procedures are in place as part of overall change control process to handle needed process adjustments. (p.52)

Level 4 PMMM organization (Project Quality Management) – By the time the organization reaches Level 4 PMMM, the methodology and the processes are well understood and become a part of each person's job. In Level 4 the project management processes are measured and controlled. The quality initiatives undertaken by the quality department are

focused towards the improvement of quality of project management and the products. In Level 4, benchmarking is the tool used to generate ideas for improvement. Pre-defined metrics are used, and are refined on a continuous basis (Fincher & Levin, 1997).

Level 5 PMMM organization (Project Quality Management) – In a Level 5 PMMM the focus is on process improvement. The project management methodology is streamlined and the projects meet schedule, cost, technical, and quality requirements. The roles and responsibilities are well understood by each individual in the organization. The project work is integrated with ongoing operations, and deliverables from different functional organizations are integrated. The project management processes are changed and refined for strategic reasons on a continuous basis to meet the quality objectives of the organization (Fincher & Levin, 1997).

Conclusion

Quality is a continuous ongoing improvement process. Once the expectations of the customer in terms of quality are understood, an appropriate quality plan should be put in place to meet the quality standards of the project. Also, it is important to ensure that the quality standards are maintained through the different phases of the project and the same needs to be measured against pre-defined quality metrics.

References

- Beautement, C. & Slankas, T. (2004). *OPM3'S Knowledge Foundation and Implementation of OPM3. PMI Global Congress 2004 --North America*. Newtown Square, PA: Project Management Institute.
- Briscoe, J. T. & Pinkas, A. G. (October, 2002). *Is Your Organization Ready for PM TQM? Proceedings of the Project Management Institute Annual Seminars and Symposium*. Newtown Square, PA: Project Management Institute.
- Broh, R. A. (1982). *Managing quality for higher profits*, New York, N.Y.: McGraw-Hill Book Company.
- Bott, M & Fry, M (2004). *Combining ITIL and Six Sigma to improve Information Technology Service Management at General Electric*. Retrieved October 7, 2006.
- CMMI (2007). Retrieved February 10, 2007 from <http://www.sei.cmu.edu/cmmi/general/general.html>
- Crosby, P. (1979). *Quality is free* New York, N.Y.: McGraw-Hill Book Company.
- Deming, W. E. (1988). *The Journal for Quality and Participation*. Retrieved October 5, 2006.
- Fincher, A. & Dr. Levin G. (1997). *Project Management Maturity Model. Proceedings of the Project Management Institute Annual Seminars and Symposium*. Newtown Square, PA: Project Management Institute.
- Gladieux, W. P. (1995). *Quality Management System Standards*. PM Network, 1995, USA, February. Newtown Square, PA: Project Management Institute.

Hutchins, G. (2000). *Project Quality Update*. PM Network, 2000, USA, March. Newtown Square, PA: Project Management Institute.

Ishikawa, K. (1985). *What is Total Quality Control ?* Englewood Cliffs, N.J: Prentice Hall.

Juran, J. ed. (1979). *Quality Control Handbook* New York, N.Y.: McGraw-Hill Book Company.

Knutson, J. (1999). *Welcome Back. Quality... From a Project Management Perspective*. PM Network, 1999, USA, August. Newtown Square, PA: Project Management Institute.

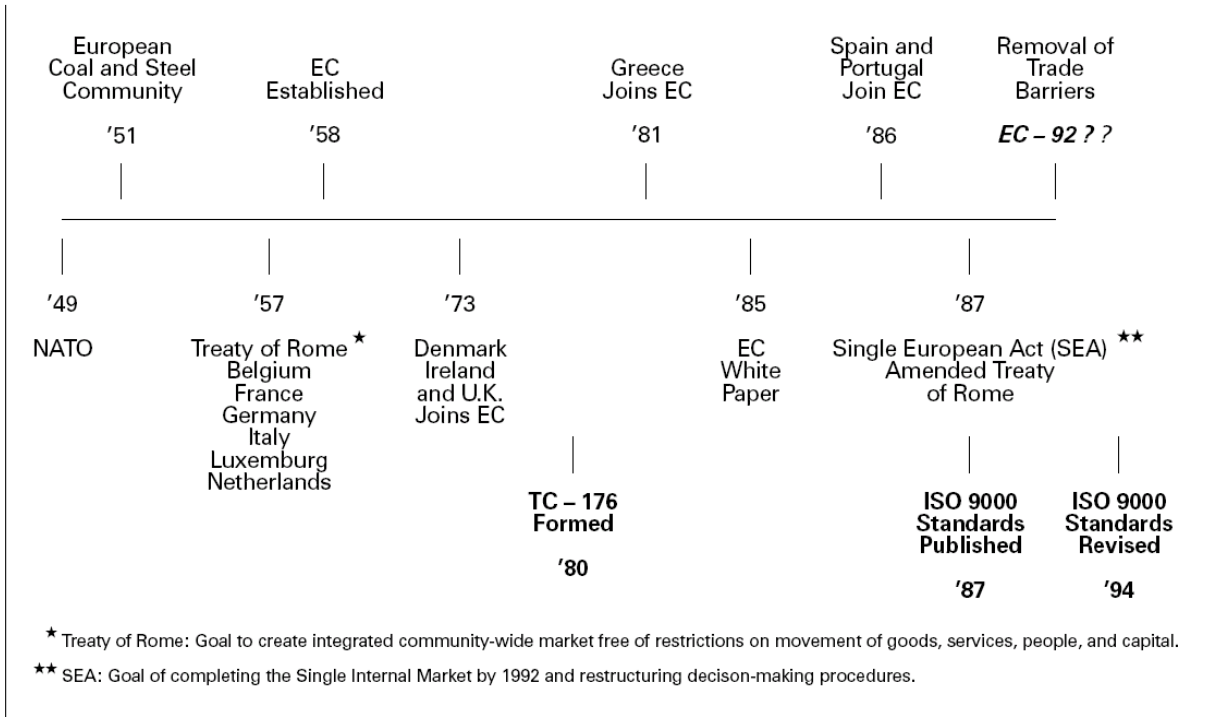
Koppensteiner, S. & Swan, G. (2005). *How to use CMMI to bring your project management process to the next level. PMI Global Congress 2005 – Scotland*. Newtown Square, PA: Project Management Institute.

Project Management Institute (2004). *A guide to the project management body of knowledge*, (3rd ed.). Newtown Square, PA: Project Management Institute.

Appendix 1

Figure 1 represents Timeline towards ISO 9000 Standards

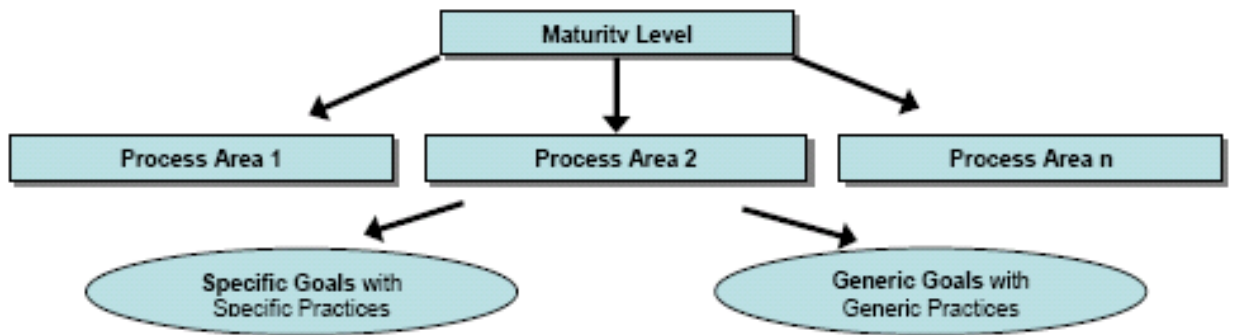
Gladieux, W. P. (1995)



Appendix 2

Figure 2 represents a Staged Model for CMMI

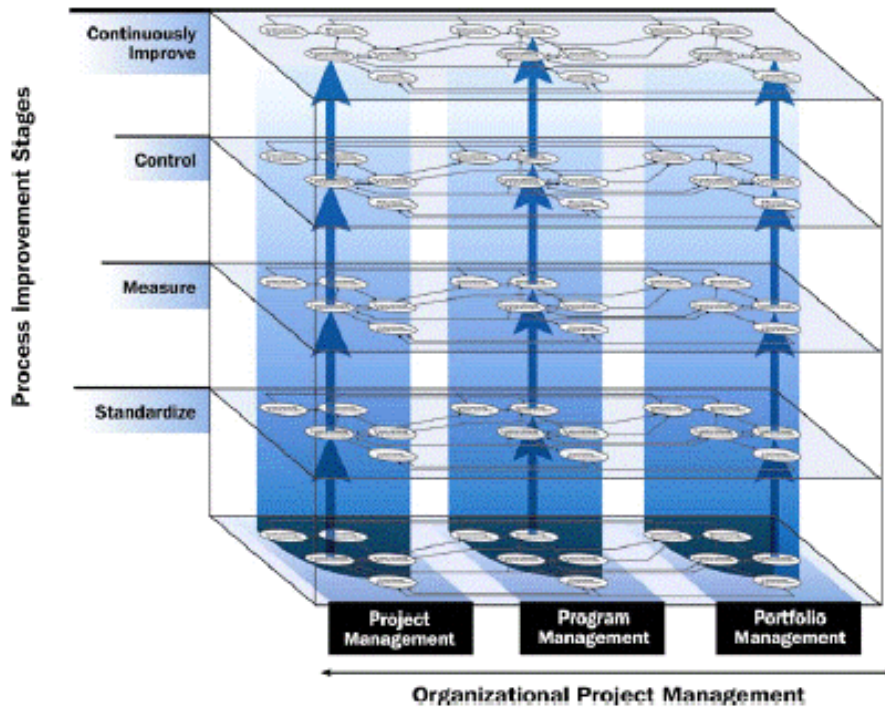
Koppensteiner and Swan (2005).



Appendix 3

Figure 3 represents OPM3 Construct

(Beautement & Slankas, 2004).



Appendix 4

Figure 4 represents Levels of Project Management Maturity Model

Fincher & Levin, 1997.

