



**EFFECTIVE PROJECT PLANNING  
IN MODERN CONSTRUCTION PROJECTS**

**By**

**KONSTANTINOS T. KAMPAS**

**A THESIS REPORT  
Presented to the Project Management Program in the  
School of Management of  
City University of Seattle  
In Partial Fulfillment of the Requirements  
For the Degree of  
MASTER OF SCIENCE OF PROJECT MANAGEMENT**



**JULY 2011**



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**July 2011**

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***EFFECTIVE PROJECT PLANNING IN MODERN CONSTRUCTION  
PROJECTS***

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## Dedication

This thesis is dedicated to my children Konstantinos and Angelos and to my beloved wife and best friend Gina whose help and support throughout the MSc course proved to be invaluable.

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## BIOGRAPHY

Konstantinos T. Kampas, Electrical Engineer

Konstantinos T. Kampas has been involved in construction projects for more than ten years. A graduate of Venizelio High School and an Electrical Engineering degree holder, Konstantinos always felt the desire to work in construction projects. Originally, he worked for a small family owned construction company, but found that the small company was not very challenging. In 2001, he began working in the special projects department for AKTOR Company. Konstantinos background and his studies led him to focus on constructing novelty and challenging projects.

Since 2003, Konstantinos department has been a model department in constructing novelty projects. He has worked closely with several project managers, gaining great experience. Currently he is supervising the construction of a project with LEED rating system, the first constructed in Greece.

## Abstract

This thesis will try to explain and guide project managers in the field of construction projects by following simple steps to proper planning and project management processes according to PMI throughout the project that will lead to successfully meet their goals. A certain project case study will be presented and the mistakes that were made will be analyzed.

The project presented here is about a shopping mall complex including construction of the stores and the green area, as also construction and lighting of the nearby roads. Due to its tight time schedule facing difficult weather conditions during winter as also the unaccountable change acceptance, led the project to a permanent rushing from the beginning till the end. Another important problem was that during the planning face of the project the Project manager did not predicted the proper resources in order to cope in such a rush with impact to the personnel working ten to twelve hours a day including most of the weekends. The only positive point of this project was to finish on time. Mistakes also occurred due to project complexities and unforeseen risk factors but mainly because of an unsuitable project plan. Through this thesis, the mistakes that were made in the duration of the project are made clear. A summary of academic research regarding project management processes which a project manager needs in order to achieve successful outcomes,

hypothetical project executed according to PMI with comparisons and recommendations modes before and after PMI methods.

This thesis will be applicable also to project teams and members that may be interested in improving their skills within their projects.



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## Chapter 1

### INTRODUCTION

It's common true that scheduling is a discipline that everyone performs with or without his intention, every day. Do we shave first or brush our teeth in the morning? If we consider that this job has to be done for just one person then the process is very simple. We need only a list with tasks needed to do and then choose in which order it will be performed. Actually the order is not completely random. There are always restrictions such as "prepare breakfast before eating" or "turn on the water heater before you make a shower" all physical constrains. There also many other types of constrains that make our life difficult and motivate us to be prepared. All these are common things to a project manager and the discipline of schedule is a must for his project success. In real life the success of a project is not only behind a successful project manager. There also organizational influences such as culture and style that have a strong influence on a project's ability to meet its objectives. Typically known as culture norms, organizational culture and styles provide knowledge about how to approach getting work done, what means are considered acceptable for getting the work done and who influential in facilitating the work is getting done.

Working for a construction company, in the division of special projects, one of the most powerful construction

companies in Greece is not an easy job. Challenging projects are considered as typical job to do and the culture of this company do not allow dissatisfied customers. I have to mention here that the company does not operate Project Management Office. The aim of this thesis is to demonstrate the stakeholders of the construction industry the importance of adopting project management procedures (PMI) on projects, and educate new project managers to include these procedures in order to meet successfully their project goals. The ultimate aim of this paper is to highlight the need for commitment of the top management to solve the the problematic functions of projects execution with PMI procedures and the ideal creation of a Project Management office.

## Chapter 2

### PROBLEM STATEMENT

The company undertook the construction of a shopping mall complex in Greece from a large group, owner and manager of designer outlet villages in Europe. The schedule of the project included the practical completion in fifteen months and the final completion after three months with a total construction and testing time of eighteen months. The relationship between the supervisors of the project and the project team was moderate.

From the beginning of the project time planning was not efficient and never worked smoothly, with everyone hardly to meet their targets by the deadlines. The hierarchical-type organization chart included the Program Manager, a functional manager with the title of "district commissioner", a Project Manager with the title of "project director", a construction site manager, the department of civil engineers and the land surveyor, the department of electric and mechanical engineers as also the administrative and secretarial staff, and the department of human resources.

Planning of the project was scheduled by the construction manager with the assent of the project manager. The schedule was not analyzed to working level in order to be understood by those involved. Only brief procedures or tasks were provided. No allocation schedule was provided with the result of lack of equipment or personnel or overtime funds in excess of two and

sometimes three tasks. During the construction a lot of incidents with less workers or excavation vehicles were mentioned and a lot of tasks resulted with big slack and others with minimum or completely no slack. In this phase which is one of the most important phases of the project no care was taken for a communication plan, proper work break down structure (WBS), risk management plan and no procurement planning.

Lack of communication plan led to a communication dysfunction between team members and construction site manager and vice versa. There were a lot of incidents with project team members not informed about construction changes asked by the customer, which led to a delay on the project schedule. Regarding the communication Plan is a must to determine project stakeholder information needs and to define a communication approach.

Loss of proper work break down structure (WBS) did not help team members to accurately and specifically define and organize the scope of the total project. This also did not allow better estimating of cost, risk. This led to unnecessary costs, needed to correct construction errors (not in scope) or mistakes caused by misunderstandings in the early stages of project cost estimation.

During the planning phase no risk management plan was developed. The risks of constructing such a project in eighteen months was a huge risk if we consider the tight

budget and schedule, the difficult weather conditions of the region and the lessons learned from constructing corresponding project in this region. There were no mitigation plans to encounter bad weather phenomena in the heart of winter leading to cost and time impact on the project. Planning of certain tasks during winter was a serial mistake and no preparation for such conditions has been taken care. No database from previous projects was kept in the central offices of the company.

Another malfunction of the project was the poor coordination in the implementation process which contribute to no one knew what and when to do it. Sector engineers could not manage subcontractors and equipment due to lack of train or experience in such type projects with a result of messing tasks and resources and wasting project budget. This led to situations where all workers were running to meet the deadlines because time has been wasted to discover what was the scope finally, who will do the job and how many will participate. Information processes were confusing and often decisions were taken by incompetent employees.

In the field of insurance of the project the contract proved insufficient and incomplete. No one has been take care of a proper insurance contract resulting in not to compensate destruction of equipment incidents from natural phenomena.

Procurement planning was not feasible if we consider that engineers undertake the procurements each one according

to his field of work. The results are most of the times known with equipment arriving on site just in time.

After four or five months of the forming, Norming, storming procedure of team development not an actual performing stage came, with a lasting conflict between some members and the project manager remain unconcerned. These conflicts were inevitable from the beginning of the project, some of them due to the wrong choice of project members and the project manager being fully informed for some of them and unaware of others but for both of them being unconcerned.

During the execution phase of the project the customer asked for numerous changes which all were accepted by the project manager with the assent of top management. This was one of the biggest problems of the project. From the beginning there was a very tight and aggressive time schedule, not to mention a very tight budget. Retail Shopping malls are projects that are advertised much earlier than the completion time and with a huge variety of investors waiting their profits. Time extension was impossible and the changes were asked within the same time schedule of the initial project. Cost was the only thing that project manager was care of and he forgot that all these changes included more job to do, more people and more time. All the project was hanged on the goodwill of the project team and the good relation the company had with the subcontractors. Every one helped a lot to finish a project with actual time execution two to three times the

time needed from practical completion to final completion. On the other hand this excessive acceptance of changes was inevitable, because there is no way to have your customer satisfied without fulfilling his desires. But the question is, did the project manager communicate with the project team in order to set expectations on how changes on the project are to be handled? The answer is of course no.

Finally and not less important is the insufficient support from senior management. During the execution phase a lot of tasks were executed under a lot of pressure and the subcontractors were asked to increase their staff in order to meet their deadlines as also to bring more construction materials for the changes requested by the client. Subcontractors were not responsible for the project delays so they claimed the additional wages as also direct payments for the immediate supply of construction materials. Project manager agreed to all above with the assent of the program manager. I have to mention that most of the subcontractors alerted the project manager that if he will not kept the agreement there is a possibility of stop work. After the second delay of payments the subcontractors stopped working and the client become furious with the project manager. The problem was solved after two weeks but the tasks delayed, adding more rush to everyone.

Many more examples exist which show clearly the picture of a project without an organizational structure and without



project management processes. The results, despite this case study and the supreme efforts of the stakeholders, can be fatal for the development of a project.

## Chapter 3

### LITERATURE REVIEW

The literature review covers the following topics: severity and weight of the project initiation process with the development of project charter, the importance of a formal and thorough project planning process, risk planning, the need for proper implementation of a project throughout the execution process, team development and manage people and conflicts , the decision making and the negotiation with stakeholders, change management plan, the importance of sufficient support of the senior management and finally the creation of an organization change plan.

#### *Project initiation process*

According to Milosevic(2003) "project charter is a tool that formally authorizes a project". The ultimate significance of project charter is the practical way of telling functional groups to provide organizational resources to project and equip project manager with the direct authority to project team members and other resources. The project charter is an excellent tool to overcome personal adversity, even cultural gaps, and misunderstandings in projects. Many organizations have recognized that project management is a key competency that is needed to help meet the business strategy. However, they seldom see the value of a project charter as part of the project management initiative.

#### *Project planning process*

According to Meredith and Mantel (2009) the primary purpose of planning is the way to establish a set of directions in full detail in order to inform the project team exactly what must be done when it must be done and finally what resources will be required to produce the deliverables of the project successfully and when each resource will be needed. In brief words the purpose of planning is to facilitate later accomplishment.

According to PMBOK (2008) Work Breakdown structure (WBS) is the process of subdividing project deliverables and project work into smaller and more manageable components. WBS is the way to organize and define the total scope of the project while representing the specified work in the current approved project statement. With this decomposition of the work to be executed to smaller components work packages are created, the planned work, which can be scheduled, cost estimated, monitored and controlled. Also according to Hubbard (1993) WBS is recommended as the fundamental tool for planning.

According to Kerzner (2009), the most important responsibilities of a project manager are planning, integrating, and executing plans. Often most of the projects, because of their relatively short duration and often prioritized control of resources, require formal and detailed planning. Planning activities need to be integrated because each functional unit may develop its own planning documentation with little regard for other functional units. It is considered that the utmost

importance of a project is the improvement of the efficiency of the operation.

According to Verzuh (2008), a project success mainly depends on delivering the project on time without any slippages, being within the budget originally set and provide quality deliverable. Additionally, when planning the project, the project manager should be able to present a statement of work (S.O.W) to the project's stakeholders who should clearly show the goals and constraints of the project. He should also provide the responsibility matrix to them so that each one would know their role in the project and the authority they may have throughout the whole process. In this way they will not be involved in each other's field of activities since they will be clear as to what they can or cannot do. All these steps taken by the project manager can certainly lead to the proper completion and success of the project.

Lewis (2005) mention that any kind of planning that is done at the beginning of the project could create slippage though, without considering certain mistakes that are usually made and that may overturn. Good project management requires thorough project planning.

Implement a project and why Strategic planning in addition to network planning.

PMBOK Guide (2008) clearly mention the importance of a proper project management plan, which will indicate how our work will be executed to accomplish the project objectives,

the project management processes that will be selected by the project management team, the life cycle of the project and the processes that will be applied to each phase and finally the descriptions of the tools and techniques that will be used to accomplish these processes.

According to Hallgren and Wilson (2008), a certain planning process should be followed. Firstly there should be a project execution plan and the appropriate responsibility allocation - who is responsible for the electrical, mechanical and civil areas of the project. A time frame should also be set, the design and function of the project and last an operational plan is very important as well. The planning process should first begin with a clearly stated contract between the company and the client so that everyone involved knows what is expected of them. The project manager should then closely cooperate with the engineering, functional and other managers, so that he/she prepares a project plan that would lead to the completion of the project within the time limit set and without any cost overruns. This project plan should cover each and every area of the project, including quality conditions, communications required resources and of course risk evaluation. The project manager should identify the potential risks and provide the potential ways of avoiding them. Throughout the operations of the project, the project manager should also get regular reports from every manager involved, so that he/she can be up-to-date at all times and

have the opportunity to deal with any problem presented. Finally if the whole planning is followed, the overall project can be successfully finished and delivered.

Martin and Tate (2001) points out that programming all the future planning meetings regarding the project at hand is a very important task. By doing this, everyone involved in the whole project process, can estimate and accordingly set aside the amount of time needed, based on certain factors. First of all they should take into account how many people will get involved and how complex is the technology that will be used. The objectives of the project are also a vital element and the work and time that will be required are dependent on their extent and that means more planning. Finally an experienced team that may have worked previously on similar projects can certainly be an asset since they may need less planning time. This of course, is something that should also be taken under consideration and combined with any historical data available from previous projects will provide more means that will eventually lead to success.

Lewis (2007) states "Strategy is the overall approach or "game plan" that will be followed to do the work". The key factor for a successful project is the tactical planning. However if not applied combined with the appropriate strategy, the project may fail. It is obvious therefore, that planning and strategy are interrelated to each other and that they are both essential to the proper completion of a project.

### *Managing people*

Meredith and Mantel Jr. (2009) clearly state that during the execution of a project certain requirements should be fulfilled to have proper planning. Clear instructions are a part of a successful allocation of responsibilities to ensure every member of the team understands the scope and its role on the project. As a result no slippages and no performance failings will impact the project.

According to Verzuh (2008), the ultimate challenge for project managers is to meet the cost, schedule, and quality goals of the project without damage to the people. Often project teams work 120% project after project. The result is they get worn out and demoralized. It is very important to end a project with high morale, great relationships with customers, and vendors that wish to work with you in the future.

According to Raymond and Bergeron (2008), a large percentage of projects developed with the support of a project management information system has succeeded. That means that these projects gained an advantage, regarding the effectiveness and efficiency of managerial tasks.

### *Team development - manage people and conflicts*

Bruce Tuchman and Mary Jensen (1977) clearly state that the project manager, whose final goal is to fulfill a successful project, should first and foremost assemble the proper project team. In order to achieve that, he should take into

consideration a certain process that must be followed for the team's development and consists of the following phases.

Forming. This is the gathering of the team and is basically the phase when people are waiting to see the goals and objectives of the project. Storming. This stage is characterized by turmoil and there may be conflicts among the team members. In this phase, their responsibilities and authority are determined and the relationship among themselves, as well. Therefore it is expected that a certain amount of conflicts will be presented. Norming. In this next phase, all the conflicts have been eliminated and it is time for the team members to apply their skills and proceed to effective decision making and establish functional relationships. Performing. We reach this stage when the team spirit is prevalent and the high quality performance becomes common. Adjourning. The fifth and final stage of team development where the team breaks up when the task is complete and the team is positive about the outcome. Team leader must be both sympathetic to team members grieving the end of the group and recognize the achievements of the group. After all these stages, a strong team has been established, ready to achieve their goal which of course is the success of the project.

Flannes and Levin (2005) clearly state that if we want to ensure a project's success we should first of all establish the proper project team. The proper teamwork is dependent on this selection and can be guaranteed if the project manager



chooses wisely. According to the authors, it is crucial for the project managers to be able to perform that task and in the process to constantly improve this team's performance. His/her communicative skills will be his/her tools so that he/she can explain clearly to each team member their purpose, the project's goals and most importantly their individual part on this. The project manager should be in a position of monitoring each member's performance by keeping an open channel of communication with them. He/she should also keep them always alert by constantly reminding them the importance of the project's success. This is the key to fulfill your goal which is of course the flawless completion of the project.

According to Belker and Topchic (2005), deal with a vital objective that every Project Manager should be able to accomplish. The development and building up of trust and confidence among team members. It is widely admitted that when it comes to compare individual work to group work, the decisions are better taken by groups. Therefore, it is important to build a strong team and that also means building their trust and confidence. It has also been established that since the technology is rapidly progressing, it is next to impossible for a single person to be aware of all its applications. So, a Project Manager most certainly needs the support of his employees, who may have very useful input to provide. In order for all this to work, the Project Manager needs to build a strong team spirit so that the project team

can perform to the maximum of their abilities. Certain factors are very important for the accomplishment of this goal.

Empowerment. If you wish to have a confident, strong project team you need to encourage them by giving them the right to make certain decisions as long as you, as a Project Manager, have already set certain limitations they should have in mind.

This can only create stronger bonds among them and provide them with more incentive to pursue the project's success.

Clear roles and responsibilities. Another basic element for the success of a project is the clear definition of each team member's role within the project. Each and every one of them should be very clear as to what their responsibilities are.

Not only that but they should also be aware of the other members' responsibilities and their leader's role as well.

Providing they know all that, a high team spirit can be created, that of course is bound to lead to success.

According to Raiden, Dainty and Neale (2004), One of the most important factors of a successful project is the human resource planning. They point out that, it is of the utmost importance to be able to match the suitable and most efficient employees of a large construction organization, to the appropriate position within a project team. In other words, one of the key elements for the successful completion of a project is, for the project manager to recognize the individual qualifications of certain employees and manage to appoint them to a position, where they can fully deploy their

skills and thus, contributing to the overall success of the project.

Lewis (2007) mentions, it is very common to organizations to have individuals serve as project managers and require that they do part of the actual work in the project. This is a certain prescription for problems. A working project manager is always a problem. If the team of the project is up to three or four people—a project manager can do some of the work. If team sizes increases, it becomes impossible to work and manage both, because project manager is pulled away from the work by the needs of his team members. Lewis (2007) also states one of the reasons for this situation is that organizations don't fully understand what project management is all about, and they think that it is possible for individuals to do both. The result is that nearly everyone in the company is trying to manage projects, and as is true in every discipline, some of them will be good at it and others will have no aptitude whatsoever.

According to Heller (1998), working with teams and having a harmonious co-operation with your colleagues is a key element to achieving your goals, which is the proper and successful completion of a project. Therefore, the groundwork that should initially be done when dealing with a project is the wise selection of the team members. They should be chosen according to their skills and having in mind how these can be used to their maximum on the proper solutions. The manager

should be able to apply his/her communicative skills and recognize each person's abilities so that he/she can place them at the best possible solution within the team. By doing this each and every one of them will be aware of exactly their assigned duties and also establish trust among them. This is, after all and according to the author, one of the golden rules if you wish to complete the project at hand with the desired successful results.

#### *Risk management and planning*

According to Loch (2006), the need for any project is undeniable even if it may seem rather impossible to be prepared. That is because through a thorough project plan we can identify the possible risks of the project, evaluate them and attempt to prioritize them. It is the only way to solve any problems that may be presented. It is, after all, much more preferable to have a project plan, however insufficient it may seem rather than not have one at all.

#### *Sufficient support of the senior management*

According to Young and Jordan (2008), a factor of the utmost importance for the success of a project is the support coming from the top management. This study clearly shows that a successful project is certainly dependent on the contribution of the top management's support, which can be crucial when it comes to important issues concerning the project such as conflicts that will probably arise during the

project. If this support is provided then it is certain that, along with the other tools and mechanisms used by the project manager, the project will be successfully completed.

#### *Change management plan*

In the field of change management Sun et al. (2006) designed a change management toolkit for construction projects that includes a change dependency framework, a change prediction tool, a work flow tool, and a knowledge management guide.

According to Levy (2006) there are three kinds of changes: rework, change order, and Construction Change Directive. Change order refers to changes that are generated by unanticipated causes, for example, scope changes from the owner, design / technological changes from the architect, and cost and/or time changes caused by supplier problems, design errors, material and operational failures. This type of change has to be negotiated case by case and requires a common (documented) agreement among all the parties involved. The contractual nature of construction changes is a very distinguished feature of the construction industry. A CCD is issued by an owner or its designate requesting a change in the contract scope when there is no agreement on cost. Rework refers to re-doing a process or activity that was incorrectly implemented in the first place and is generally caused by quality defects, variance, negligence, and poor design and/or

on-site management. Rework is usually pure waste and should be avoided as much as possible.

According to Lock (2004) all projects are disrupted by changes. Even if there are no design mistakes, most clients change their minds to a greater or lesser extent during the works. Some contractors regard changes as a great nuisance and other welcome changes requested by their clients because they expect work on changes to be more profitable than work against the original project contract. What is certain is that there must be a procedure for dealing with them. Otherwise projects could descend into chaos.

According to Baca (2005) change is one of those necessary evils you must manage well if you want to deliver on time, on budget, and with the quality defined by the client. She adds very well also that change management is the series of steps we must take to guarantee that every change requested is handled properly to the advantage of the project.

*Organization change plan.*

According to Trahart and Burke (1996), an organization's readiness for change will determine its ability to attend to environmental signals for change as well as its willingness to listen to internal voices saying that change is needed.

According to Tupper and Deszca (2007) change occurs when there is an understanding of the need for change, the vision of where the organization should go and a commitment to action. Change is a real need that demonstrated by data, facts

and a perceived need that seen participants in the change. The authors add accurately also that, organizations often use external change agents or consultants to promote change, as they can bring technical change management expertise to the change team. Consultants can provide subject matter expertise and give credibility to a project that insiders might not have. It is also very important to understand that a good change management team is described as follows: Being knowledgeable about the business and enthusiastic about the change, possessing excellent communication skills, having total commitment to the project and able to remain open minded and visionary. Finally and most important is that proper care is required regarding the resistance to organizational change by stakeholders. Tupper mentions that resistance is inevitable in change situations.

## Chapter 4

### METHODOLOGIES AND PROCEDURES

#### USED IN THE STUDY

This Thesis is a literature review. The author will attempt to explain and establish, through the respective bibliography, project management in the field of construction projects by following simple steps to proper planning and project management processes according to PMI throughout the project that will lead to successfully meet their goals.

The whole effort is focused on what has to be done before the beginning of a project and during its processes as well, so that the desired goals will be achieved. This will be build through the respective bibliography. It should be noted that a successful project is not only a project succeeding in time, cost and quality or performance. There is also an important parameter. The parameter of stakeholders and they must be satisfied. The author will present a comparison image of how a project fails through wrong procedures, past experience, and when using the appropriate project management procedures effectively how the project succeed. The actual comparison will be composed by the following steps: a) A briefly reference to the bad execution of the past project with an extensive reference to all the problems, deficiencies and results, b) Reference to PMI processes, c) Processes that could be adopted to the project without the involvement of



higher management, d) Processes that could be adopted to the project with the involvement of higher management or partial involvement of higher management.

## Chapter 5

### RESULTS

The author has clearly clarified from the beginning and throughout this thesis that the project presented is one that was constructed in the past and failed in many areas of project management with high risk of a complete failure and a final interruption of the project. These project problems are defined to:

A) Poor planning due to:

A.1) Project schedule composed by the construction manager and not the project manager resulted in a non-objective recording of tasks working time.

A.2) Project schedule was not analyzed to working level resulting in not to be understood by those involved.

A.3) Allocation schedule was not provided resulting to the lack of equipment or personnel or overtime funds in excess off two and sometimes three tasks. Many incidents with lees equipment or workers were mentioned during the construction and tasks with minimum or completely no slack.

A.4) Communication plan was not provided by the project manager resulting to communication dysfunction between team members. Incidents where project members were not informed for construction changes led to a delay on the project schedule with a rebuild cost.

A.5) Insufficient Work breakdown structure resulting not to help team members to understand accurately and specifically define and organize the project scope. This led to construction errors and mistakes made by misunderstandings of the project scope with a cost effect to the project budget.

A.6) Risk management plan was not developed resulting in no mitigation plans to encounter bad weather phenomena in the heart of winter leading to cost and time impact on the project .

A.7) Poor coordination in the implementation process resulted to no one knew what and when to do it. This led to a result of messing tasks and resources and wasting project budget. Information processes were confusing and often decisions were taken by incompetent employees.

A.8) Insufficient project insurance contract resulted to not to compensate destruction of equipment incidents from natural phenomena.

A.9) No Procurement planning was developed with a result of most of the times equipment arriving on site just in time and some times out of time with a huge time impact on the project schedule. Regarding the construction phase:

B) Poor execution management due to

B.1) Performing stage of the project team never appeared with remaining strong conflicts between team members as a result of wrong choice of project members and unreasonable attitude of unconcerned of the project manager.

The poor performance of the team had a great impact on the project schedule.

B.2) Poor Change management due to numerous changes asked by the customer which all were accepted by the project manager with the assent of top management in a very tight and aggressive time schedule and budget. Communication with the project team was not developed in order to set expectations on how changes on the project are to be handled resulting in a permanent rush of the project schedule.

B.3) Insufficient support of the senior management due to non-compliance and non-agreement to support the project manager in the effort of achieving the objectives of the already delayed project time schedule resulting the working stoppage of the non-paid on time subcontractors and time impact on the project schedule.

According to Project Management Institute PMBOK (2008) there are five project management process groups. These are:

1. Initiating process group including project charter and identity of stakeholders, procedures to define a new project or a new phase of an existing project by obtaining authorization to start the project or phase.
2. Planning process group which part of it are project management plan, define scope and WBS, develop schedule, communication plan, risk plan, procurement

plan, develop project team, procedures performed to establish the total scope of the effort, define and refine the objectives and develop the course of action required to attain those objectives.

3. Executing process group involving coordinating people and resources, as well as integrating and performing the activities of the project in accordance with the project management plan.
4. Monitoring and controlling process group including processes required to track review and regulate the progress and performance of the project. This group includes also the identification of any areas in which changes to the plan are required and the initiation of the corresponding changes.
5. Closing Process group consisting of those processes performed to finalize all activities across all project management process groups to formally complete the project, phase, or contractual obligations.

In our effort to adopt PMI processes in the mentioned project without the involvement of higher management the following processes are defined: From the planning process group, project management plan, define scope and WBS, develop schedule, communication plan, risk plan, procurement plan and

compose of the project team. From the executing process group, direct and manage project execution, develop and manage project team. From the monitoring and controlling process group, monitor and control project work, verify and control scope of project, control schedule and costs, perform quality control, and monitor and control risks. From the closing process group, finalize all activities of the project processes.

To adopt PMI processes which cannot exist, partially or totally, without the consent or support of higher management we define the following process group. Initiating process group , the project charter where the development of a document formally authorize the project manager to the project and identify all the stakeholders. The choice of the right project manager is crucial for the development of the project as also the culture of the organization in terms of adopting project management processes in this project.

From the executing process group as also in the monitoring and controlling process group, managing change requests is a part of the project manager and higher management collaboration. Finally from the closing process group, document lessons learned as a database for every project.

Summarizing the above it is clearly defined that adopting Project management processes in a project will solve many problems of time slippage and cost overruns. Actually project

management will successfully solve the need to manage and balance the three most important elements of a project: people, time, and money.

## Chapter 6

### DISCUSSION, CONCLUSIONS, RECOMMENDATIONS

Summarizing all the above it is clearly stated that, a superior project management can make a project successful, while a poor project management can spoil our efforts, money and time. It is obvious that if project management procedures are adopted in an organization, certain benefits will be earned such as better production efficiency, increased customer satisfaction, improved efficiency in delivering services, competitive edge regarding a superior performance in a competitive market and finally better flexibility to manage small or large projects.

The establishment of a Project management office (PMO) will also help CEO's by providing the structure needed to standardize project management practices, facilitate project portfolio management, and determine methodologies for repeatable processes. The PMO also holds a company in a state of vigilance to complete more projects on time and on budget with fewer resources. PMO is also responsible for coaching, mentoring, and training of project managers as part of continuous improvement. Another part of the role of the PMO is to gather information of past projects as a lessons learned database and store for future review by project managers. The information that is collected becomes invaluable in terms of allowing future projects to learn from the success and



failures of previous projects. It provides also methods of comparing estimates and actual values from older project to current. Of course it is understandable that the development of this database is a process that will take some time to grow but has the potential for significant returns. Although there are suggestions and solutions to the problems an organization face, that has not adopted project management procedures yet, several important questions are born. "Why change?" when blind faith in management isn't enough. Everyone wants to understand why something needs to be done particularly when it means more work or sacrifice. A sustainable change begins with a thorough analysis of what needs changing. In fact, the change analysis is not the only proof to accept a change. An organization's past success, existing culture and current vision can sometimes to be among the strongest impediments to create awareness of the need of change (Tupper & Deszca 2007). To create the need for change there are certain approaches to create senior management awareness of this need. This can be only achieved by a change leader, the person who provides leadership and direction for the change fall within his broader coverage. Critical in this effort is the understanding of the organizations readiness for change.

The change management plan will be prepared by the change leader and his team. A bottom up organization change plan is proposed in this thesis and this is because the organization's ability to change is dictated by the operational units and

employees, not leadership. Team members are invited to participate in every step of the change management process with an advantage of flexibility, collaboration between the members and a high motivation because of the team member contribution to the way the plan is developed. In this thesis the Beckhard and Harris's change management process (1989) is proposed. It consists of the following stages: Organizational analysis, is the stage of the process used to understand the reasons for change and organization performing. Why change, is the stage where the need for change is determined. The Gap analysis, is the comparison between the desired future state (project management procedures) and the present state (without project management procedures-previous projects). Action planning and transition management is the stage of the process where plans are developed in order to bridge the gap between the current and the desired future state and how this will be managed. Finally the Measuring change, the monitoring phase to help to know where we are in the change plan and the goals achieved. To initiate the change, top management commitment is critical required but sometimes the inappropriate delegation of sponsorship and the misapplication of systems are two of the most commonly cited mistakes made by top management in change initiatives (Floyd, 1992). The senior management should support from the beginning the effort facilitating the change team in taking decisions. The establishment of a PMO is

another part of the plan with the benefits mentioned above as also the training and coaching of existing project managers.

Aiming to underline how important is the initiation of a change plan I want to close this chapter with the words of a famous philosopher. "It must be considered that there is nothing more difficult to carry out nor more doubtful of success nor more dangerous to handle than to initiate a new order of things". (Machiavelli 1446-1507).

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