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A CROSS FUNCTIONAL PROJECT MANAGEMENT MODEL FOR SIEMENS MALAYSIA

VIJAY ANANDA RAJA A/L MURUGESU

A capstone project report submitted in partial fulfillment of the
requirements for the award of the degree of
Master Project Management

Faculty of Civil Engineering
Universiti Teknologi Malaysia

MAY 2011

DECLARATION

"I declare that this capstone project report entitled "A Cross Functional Project Management Model for Siemens Malaysia" is the result of my own research except as cited in the references. The capstone project report has not been accepted for any degree and is not concurrently submitted in candidature of any other degree."

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Date : …….

DEDICATION

TO MY BELOVED WIFE SELVARANI AND PARENTS MR AND MRS MURUGESU

ACKNOWLEDGEMENT

I would like to express my deepest gratitude and sincere appreciation to my project supervisor, Prof. Dr. Sha'ri Mohd Yusof for his generous advice, guidance, encouragement and patience throughout the duration of project capstone.

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Finally, I am thankful to my wife and parents, for their continuous support and encouragement.

ABSTRACT

Effective and efficient implementation of project is crucial in sustaining the trust of clients & stake holders as the solution provider. Despite having a good performance monitoring system and accredited quality management system, project failure rate remains high and success rate repeated less. This suggest for further research and development of new process model and organizational structure to create stronger project management. The establishment of Cross Functional Project Management (CFPM) is one of strategies to promote this improvement. Poor knowledge management, non alignment with the organization goal, strategy and direction, poor communication with other parties who are involved in the project whether involved directly or indirectly not in the scope of work but involved in the entire project, poor time management are the main reason for project failure. The aim of this study is to determine the present project management practice in order to propose an improvement to the exiting practice by developing a CFPM model. The study will be limited to project management for Distributed Control System (DCS) system for Power Plants. Data will be collected using mixed method approach i.e. document search, semi-structured expert panel interview and questionnaire survey in order to evaluate the current quality management practices and obtain opinion from respondents drawn from targeted project teams. It is anticipated the finding of the studies will facilitate Siemens Malaysia to improve the success rate of the projects and the client satisfaction.

ABSTRAK

Sebagai satu organisasi yang bereputasi tinggi adalah penting melaksanankan projek secara effektif dan efisyen bagi mendapat kepercayaan pelanggan dan pihak yang mempunyai kepentingan.Walaupun mempunyai system pemantauan yang di akridetasi namun kegagalan projek tetap tinggi.Ini telah membawa kepada ilham untuk mengkaji dan mewujudkan proses model dan struktur organisasi yang baru yang mampu mewujudkan pentadbiran projek yang lebih mantap. Cross Functional Project Management (CFPM) adalah salah satu stratergi yang mampu membawa pembaharuan tersebut. Pentadbiran pengetahuan yang rendah, tidak sejajar dengan objektif organisasi, masalah komunikasi dan mengunaan masa yang tidak efisyen adalah sebab utama kegagalan projek. Tujuan kajian ini adalah bagi mengkaji kekurangan sistem pentabiran project yang sedia ada bagi mencadang sistem pentabiran yang lebih mantap berdasarkan model CFPM.Skop kajian ini di hadkan kepada petadbiran project bagi industri janakuasa.. Data akan diperolehi menggunakan kaedah temubual dan borang soal selidik dari responded yang mempunyai pengalaman dalam bidang janakuasa. Hasil dari kajian ini di harap mampu memperbaiki kadar kejayaan projek di Siemens Malaysia

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CHAPTER 1

INTRODUCTION

1.1 Project Background

This chapter provides a brief description of Siemens Malaysia Sdn Bhd and its business. The chapter continues with the definition of the problem in which the challenges and complications facing the company are described. The challenges identified in the problem description then leads up to the purpose of the study followed by the specified questions, emerging from the purpose, is presented. The study's delimitations are then provided the reader before the chapter ends with a dispositions part and reading instructions in order to give the reader an idea of how this report is constructed and where to focus ones attention.

In the prevailing uncertainty and ever-changing business environment knowledge has become the single source for sustainable competitive advantage. Learning from past mistakes and avoiding reinventing the wheel are crucial tasks and no organization can today afford not to look for ways to make the best use of its knowledge. Since knowledge in itself cannot be directly managed organizations need to focus on managing the creation and sharing of knowledge. Integrating knowledge management activities in

the cross functional operations of the organization is in this way a prerequisite for achieving efficient use of internal capabilities and knowledge.

Despite a well-established general opinion of the importance of knowledge within the business environment many organizations have poor processes and capabilities for managing and augmenting the organization's knowledge-base. Converting human capital into structural capital that can be made available to all across the organization is another area in need of improvement in order to enhance the utilization of the knowledge possessed by an organization. Before introducing cross functional management within an organization, management need to realize that it is not a short-term initiative with immediate effects on the operating margin of an organization but rather a way of achieving enduring changes in the corporate culture and work patterns realizing long term profitability and competitive advantage. A long-term management support is hence vital for creating an organizational environment enabling the efficient utilization of the organization's knowledge-base and leveraging the firm's capabilities in attaining sustainable competitive advantage. Siemens Malaysia Sdn Bhd is one of the companies experiencing the challenges of managing the organization's knowledge-base. Being an key player in a knowledge intensive industry further intensify the importance of levering the organization's capabilities and knowledge for Cross Functional Management. Siemens was accordingly selected to be the case company of this study; hence being elaborately examined.

1.2 Siemens Malaysia

Siemens Malaysia established in 1984 consists of over 4000 staff specializing in 3 different business segments which are Energy, Healthcare and Industry. Energy's portfolio consists of providing solutions for the power producers onshore and to the oil

and gas companies offshore with a geographic boundaries covering ASEAN. Energy consists of departments providing engineering solutions, sales of gas and steam turbines, services and control system solutions. As part of this study we will be discussing in more detail that goes on within the control and instrumentation planning and execution department or EFIE as it's commonly known.

EFIE Malaysia consist of the internal and external department, the internal department consists of planning and executing projects within the ASEAN region where else the external team or IE 47 team is a back office to a majority of projects from its counterpart office in Erlangen, Germany. IE 47 Germany and IE 47 Malaysia collaborate on planning and execution of Instrumentation and Control projects across the globe. The Project Managers are from the IE 47 office in Germany and the project execution teams are based in the EFIE office of Malaysia. There is certain collaboration between the internal team & IE 47 on certain project but it is on a very rare occasion.

1.3 Project Management

Project management is a management approach concerned with getting the job done on time, within budget, and according to specifications. The primary focus is on results. When professionals carry out projects, they direct their efforts to achieve clearly defined results say, building a bridge, developing a new database system, designing a training curriculum, writing advertising copy, or cleaning the garage. Infinite resources are not available to apply to projects (Block, 2005).Project managers operate under the universal triple constraints of time, budget, and specifications. Time constraints can be brutal.

To be competitive, organizations must do their jobs fast. It is not unusual for a project team to be asked to achieve a nine month job in seven months. Budget constraints demand that project teams do more with less. Constraints on specifications limit the range of discretionary action that project teams can employ in producing deliverables.

1.4 Current Project Management Practice

The current practice of project management in Siemens is based on guideline of PM@Siemens. It is compulsory for all project managers to follow the strictly to the guideline of PM@Siemens manual to ensure same quality and fulfilling Siemens standards. The basis of the Project Management Manual is the Phase Model for Power Station Control & Instrumentation Systems Flow chart (Figure 1.1). The flow chart for the preparation of tenders and the processing of orders is shown schematically in the Phase Model for Power Station Control & Instrumentation Systems (Figure 1.1).

The model describes the structure of the processing procedure and its internal dependencies. The phase model for power stations C&I systems is built up in the following way:

- the horizontal axis shows the course of the project time wise in distinct phases
- the vertical axis shows the various activities split functionally
- at the transitions between phases milestones are defined, the results of which can be checked. The release of these results is a pre-condition for the next phase to start.

The work flows and procedures of the project process describe the Project Management Manual in form of a 3 layer model (Figure 1.2)

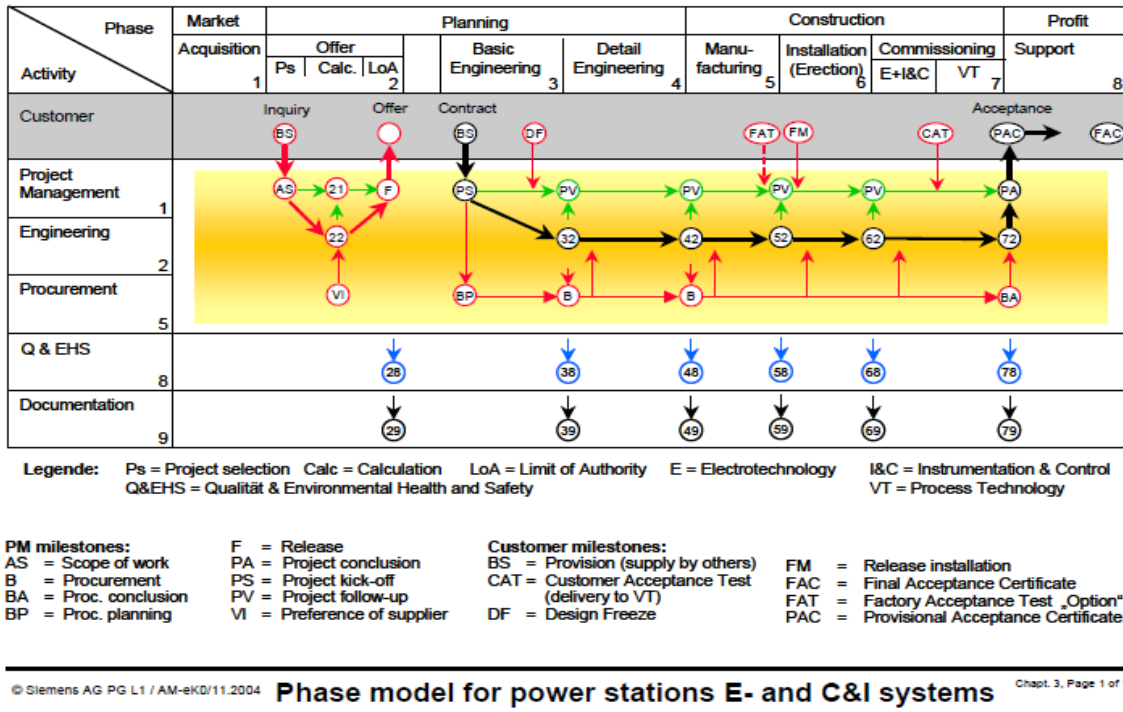

Figure 1.1: Phase model flow chart

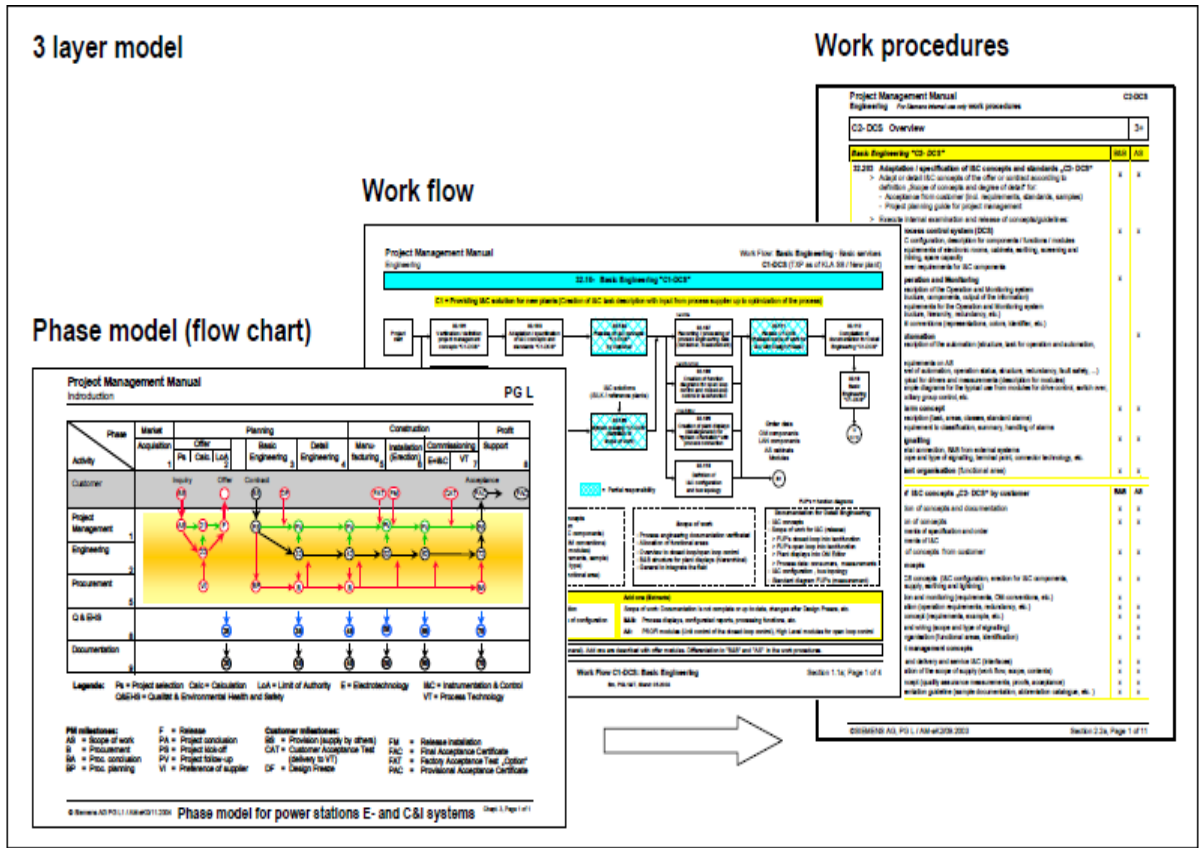

Figure 1.2: 3 Layer Model

1.5 Project Phase for DCS project

The project phase shows the workflow involved in a typical project in Siemens. This is a general process layout which later has to be customized to cater for individual project. Basic engineering phase will be done by a design team under the supervision of the project manager. All the terms and condition and requirement by the client will be review and concepts will be developed. Frequent meetings with the client and the sales team whom handed over the project to the project manager will be held to clarify custom project requirement. Figure 1.3 is showing project phase for DCS project.

Once all the concepts and requirements has been developed and identified, the hardware and software team will begin detailed engineering design. Every detail of the project will be considered and designed. The ordering of the components and material will also be placed by the project manager. The man power requirement has already been planned during the bidding stage of the project. The project manager will revise the man power allocation according to the budget and dateline of the project. Manufacturing will be done according to the project requirement. For regional projects the manufacturing will be done locally by contractors. The manufacturing process will be monitored by the project manager and the hardware engineering team. For other regions it will be mostly done by manufacturing plant in Belgium. Software logic which was developed will be loaded into system for pre test and loop checks will be carried out. Any problem arise will be trouble shoot before the actual test phase.

The factory acceptance test (FAT) will be carried out at the manufacturing site by the project manager and the project team along with clients, depending to the contract requirement. Usual 10% signal test will be carried out to ensure the system is meeting all the required criteria. There are occasions where 100% signal of the system is tested. This is depending to the contract. Once the test is passed, the system cabinets will be shipped out to site.

Erection and installation will be carried out at site. Usually there will be two team involved in erection process. This again depends on the size of the project. This process will be closely supervised by the project manager. Once the installation is carried out, the next phase will be the commissioning phase.

For commissioning, there will be specified commissioning team who will commission the distributed control system (DCS) for the whole plant. This team will be well trained in DCS commissioning in both hardware and software. At the end of commissioning process trial runs will be carried out to inspect on overall system behavior. The system will be allowed to run for certain period of time to detect any glitch in the system. After that period of time, the system will be handed over to the client. Throughout the whole process, the project managers role is the most vital to ensure the whole process runs smooth.

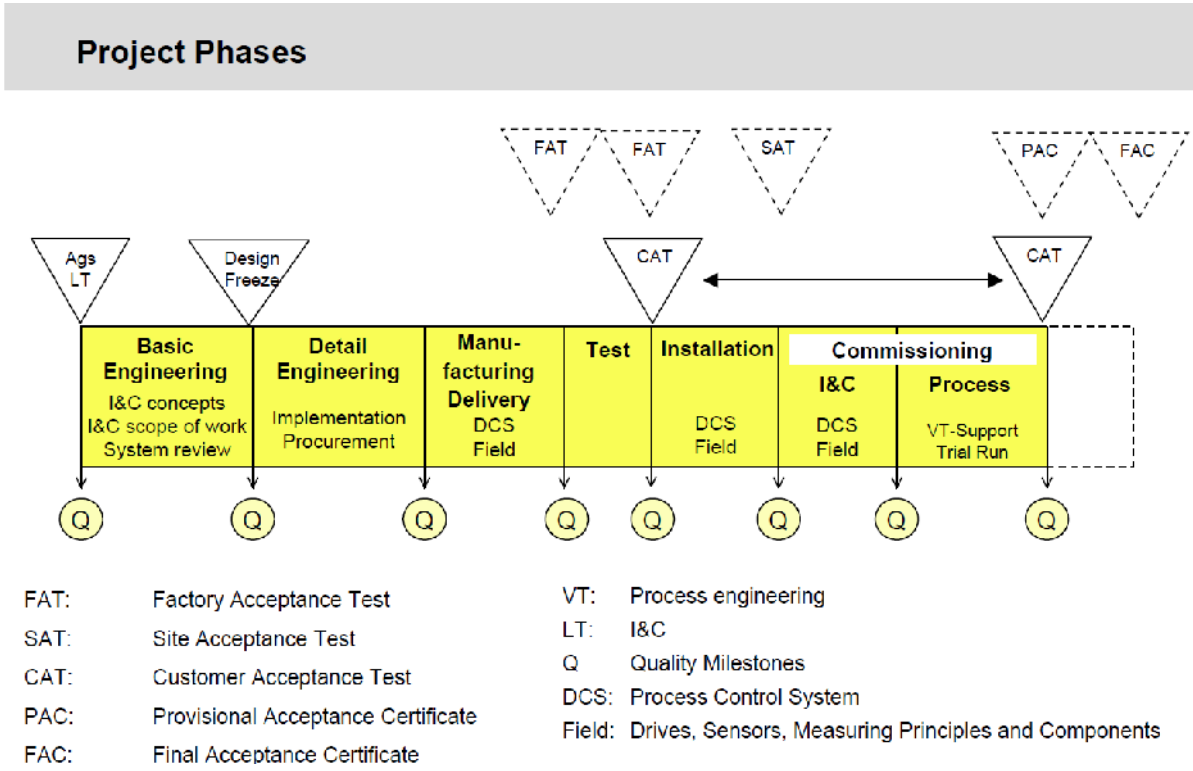

Figure 1.3:Project phase for DCS project

1.6 Communication Process in Siemens Project Management

The figure 1.4 is showing the process of communication in current project management structure. Form the figure it is showing the responsibility is more on Regional unit manager (RUM). Second highest responsibility is on the Subdivision L1 management and the center of competence. In this structure the responsibility of overall communication relies more on top management. This will not allow free flow of information between middle management and everyone below. The communications in this form are restricted and knowledge transfer is limited.

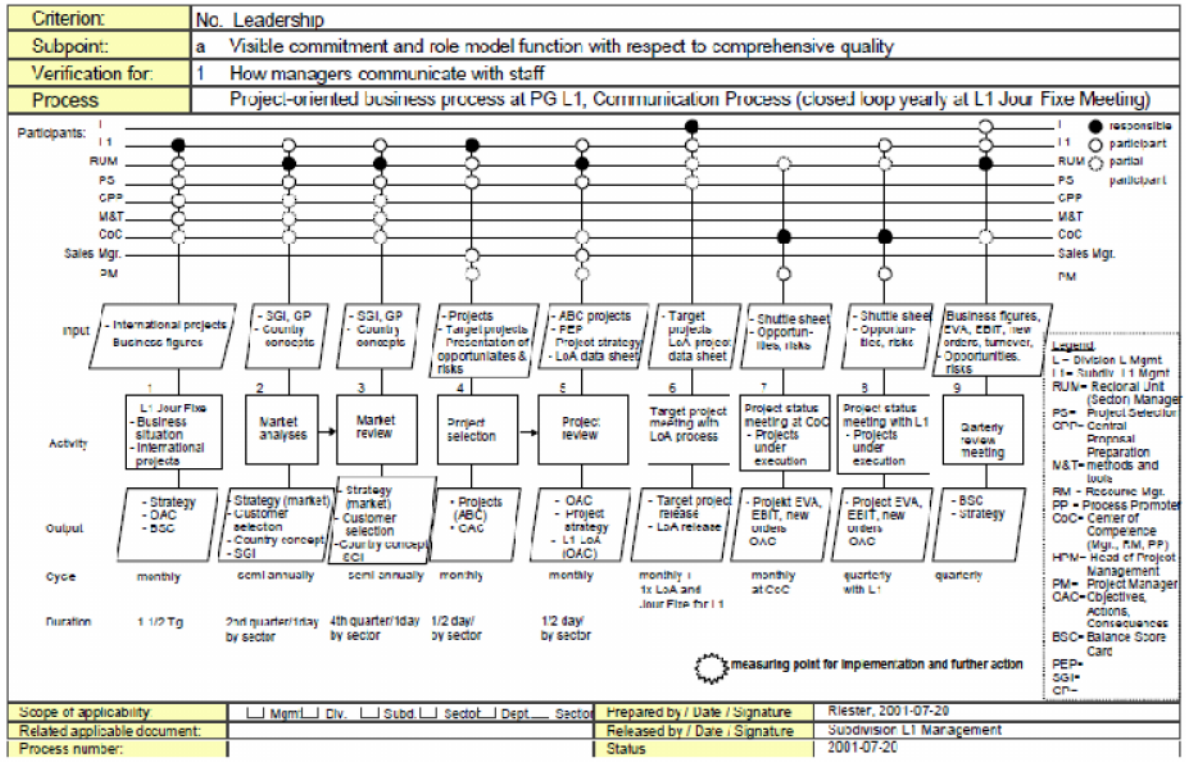

Figure 1.4: Communication process in Siemens Project management

1.7 Standard communication process

The figure 1.5 shows the current project management and its relationship with other entity. There are communication between one department and another, but it is restricted to information sharing. There are no resources sharing or collaboration taking place.

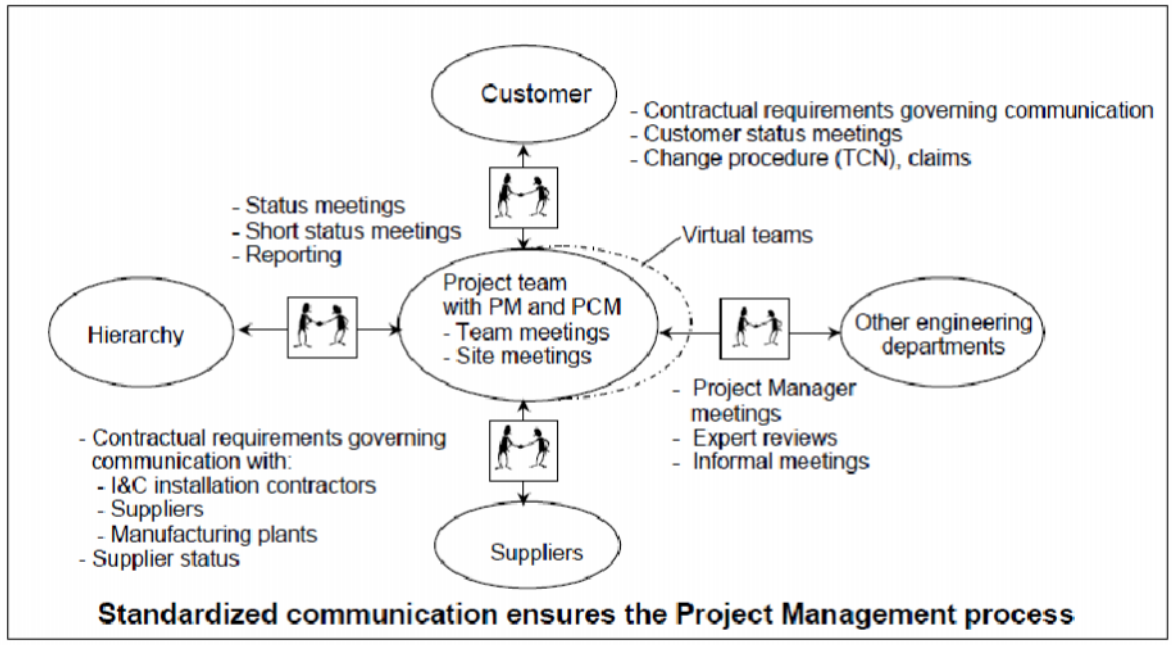

Figure 1.5: Standard communication process