



Cooperative Education Report

The Glimpse of Technicality in an Industrial Corporation



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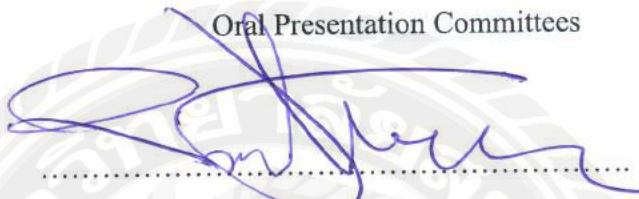
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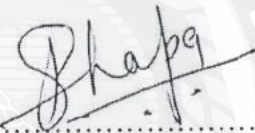
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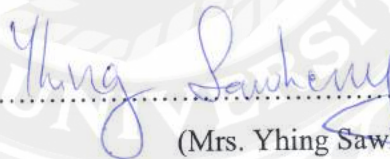
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Abstract

This internship is conducted at Siam Industrial Company Limited, which is widely known as a company for trading machinery and industrial products with high quality of service in both installation and maintenance of the equipment. During my internship program, my study was focused on supplier selection process and documentation management practices deployed by the company. The underlying purpose of this analysis was to get familiar with the industrial practice in Thailand and to apply the theoretical knowledge and concepts taught in the classroom into real life day to day situations and scenarios. There is lack of suppliers for the raw materials for making the industrial equipment. In order to address the problem, I was assigned to look for the suppliers in the market. I used internet as a tool to research about the steel manufacturers from Thailand as well as from various other countries. Internet and E-mail was my tool for research on the supplier selection. The collected data was interpreted through observation as well as qualitative basis. Based on the interpreted data it is found that the formal communication skill is an important factor to consider while presenting the company to another company. Through this internship I have learned that the formal use of communication would make it easier to increase the networking provide precise information to the receiver. I understood that discipline is a key to respect between the co workers and organizational ethics plays a pivotal role in organizational reputation.

Keywords: industrial procedures/ industrial culture/ discipline/ organizational ethics/ formal communication

Acknowledgement

This report entitled “The glimpse of technicality in an industrial Corporation”, has been prepared for partial fulfillment of Bachelor of Business Administration. It is directed towards the learning and experience in an industrial corporation of during my internship tenure. It contains neither material previously published by other person nor material which has been accepted for the award of any other degree of the University.

I wish to extend my sincere thanks to Mrs. Yhing Sawheny for providing me the opportunity for an internship at Siam Industrial Corporation Limited during 19 February – 19 May 2018. I would like to thank my cooperative supervisor Dr. Parham Porouhan and Mr. Maruj for guiding me to complete this report. This project has been successfully completed with satisfaction and memorable experiences. I would like to thank Mr. Sanjaya Dhoj Thapa and Mr. Gaurab Singh Hamal from Siam Industrial Corporation Limited for making this internship memorable and fun. I would also like to express my gratitude to the MRP Engineering company and people who supported in any way while completion of this internship program. I would also like to thank Mr. Rajat Manandhar, Mr. Pratap Bajracharya and Mr. Diwash Bahadur Singh for helping me during my internship tenure.

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Acronyms

BBA: Bachelors in Business Administration

PLC: Public Limited Company

Ltd: Limited

SICORP: Siam Industrial Corporation Limited

ISO: International Organization for Standardization

SIC: Siam Industrial Corporation

PID: Project Initiation Document

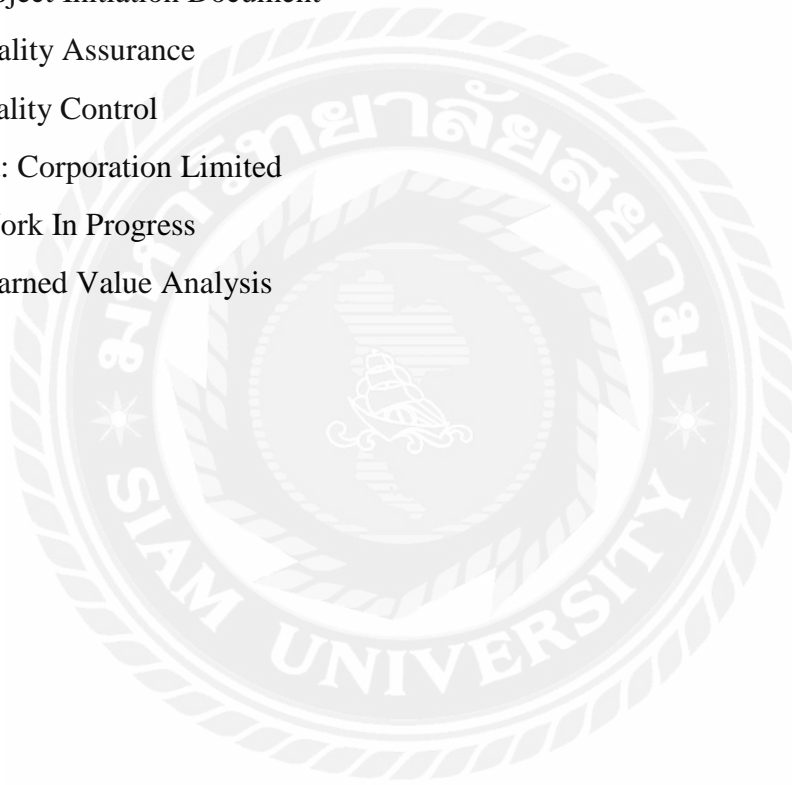
QA: Quality Assurance

QC: Quality Control

Co., Ltd: Corporation Limited

WIP: Work In Progress

EVA: Earned Value Analysis



Chapter 1: Introduction

1.1 Company Profile

Siam Industrial Corporation was founded in 1973. It is an industrial corporation with business line of trading machinery and industrial products with high quality of service in both installation and maintenance of the equipment. It was founded as a subsidiary of Sino-Thai Engineering and Construction Public Limited Company(PLC) with the name “Sino-Thai Corporation Limited”. The company started with an initial registered capital of one million baht. The company was a sales distribution channel and an installation service provider of high quality construction equipment of KATO overhead cranes and TCM forklifts. (About Siam Industrial, 2018)

In 1982, registered capital of the company was increased to 5 million baht. In 1985, the company restructured itself as independent business. As a result, the name of the company was changed to Siam Industrial Corporation Ltd (SICORP) with Mr. Krishna Sivakriskul as President. Similarly, in 1986, the company increased its registered capital to 10 million baht. The company also established a new subsidiary company named as Siam Industrial Installation and Service Co., Ltd. This new subsidiary was established to serve the demand of professional services which was rising rapidly in the market (About Siam Industrial, 2018). The expansion of business continued, and the company had increased registered capital to 20 million baht in 1991. Today, with registered capital of the company is 60 million baht. The mission of SICORP' is to become one of the leading sales and services firms of material handling and heavy machinery business. Therefore it's product lines have expanded into Hoist, Cranes, Elevator and Automatic Car Parking. It is the core of the company to continuously maintain its expertise on full range of products and to provide professional services to all customers. (About Siam Industrial, 2018)

SICORP implemented the ISO 9001 Quality standard management system throughout its entire operation. The implementation has helped with upgrading its management and operational system to match recognized international equivalents. Through a combination of strong determination and dedication by all management and staff, SICORP achieved the prestigious ISO 9001:2008 Certification on May 24, 2001 presented by AJA Registrars as an importer and sole distributor of various types of equipment and provision of installation, after sales service and maintenance. Later SICORP added a business line of EPC contractor. SIC-EPC is a business unit and it is in charge of all the activities involving general contracting for engineering, steel fabrication and erection installation of industrial equipment and machinery. The mission of SIC-EPC is to become one of the leading sales and services firms of material handling and heavy machinery business. (About Siam Industrial, 2018)

SIC-EPC facilities are located at MRP facilities in Chonburi province around 25 km to Laem Chabang deep seaport of Thailand. The MRP Engineering Co. Ltd is the one of the major contractor and subcontractor of SICORP. It is an engineering company equipped with variety of machineries to provide different

kinds of services such as sandblasting, painting, milling, welding and fabricating the metallic components. There are two heavy machine shops, two fabricating shops and one grit blasting and painting shop in the factory premises (MRP Engineering, 2018). The MRP factory has:

1. A fabrication area with a covered area of 10,000 sqm (four halls of 120 x 20 x 12 m, each provided with 4 overhead cranes of 20 tons capacity).
2. A blasting and painting building of 1,800 sqm provided with a closed grit blasting chamber and two cranes of 20 tons capacity.
3. A heavy machining shop of 10,800 sqm.
4. A light machining shop of 2,025 sqm.



Figure 1: Factory layout at MRP Engineering (MRP Engineering, 2018)

All the tasks and works related to the fabrication and erection are performed by SICORP as per the following scheme:

- a. Project Management & Coordination
- b. Engineering, process, conceptual, detailed and shop drawings
- c. Procurement of raw material for fabrication
- d. Fabrication work including preparation works, assembling, welding, surface preparation and painting
- e. Quality assurance and quality control procedures
- f. Testing requirements (welding, painting, trial)
- g. Packing and delivery to the port or to any job site
- h. Site work including unloading, storage, erection & installation work
- i. Site Management, coordination & supervision.

SIC-EPC works for fabrication and erection of standard, light or heavy weight structural works for the industrial sector. It can work with flat or round steel plate to carbon, alloy and stainless grade steel (About Siam Industrial, 2018). SIC- EPC is a department in charge of all the activities as EPC contractor for the following:

- i. Engineering process design, equipment sizing
- ii. Testing campaign in laboratory and pilot plant
- iii. Detailed design and shop drawings engineering.
- iv. Conducting checks and measurement of fabricated items
- v. Maintenance of the equipment and machineries.
- vi. Construction, installation works of steel fabricated components and structures for buildings & industrial works, equipment, machinery.
- vii. Piping construction and erection work.
- viii. Electrical & instrumentation installation work.
- ix. Testing, start-up, commissioning and test runs.
- x. Project and construction management, supervision & coordination.

The SIC-EPC has projects which includes:

- i. TLT -Turbo GMBH axial fan for power plant
- ii. GOWA GMBH sound attenuation system
- iii. Donaldson Filters co., Ltd with fresh air filters for powerplants
- iv. Bangkok Airways as ULD project
- v. Thai Airways Catering in Suvarnabhumi Airport
- vi. Hydropower projects in Myanmar
- vii. Quicklime production plant in Prachinburi, Thailand
- viii. PCC production plant in Prachinburi, Thailand

The given picture represents the TLT turbo GMBH project's completion which is contract from different parts of the world. (About Siam Industrial, 2018) The numbers in the picture is represented as:

1. Fresh air fan power plant Karlsruhe RDK8 - Germany
2. Hot gas fan Medupi power plant – South Africa
3. Hot gas fan Medupi power plant – South Africa
4. Hot air fan assembly GKM- Germany
5. Fan housing
6. Diffuser
7. Suction Box
8. Transition Piece
9. Meenakshi Impellers - Siemens India



Figure 2: TLT Turbo GMBH project's products (*About Siam Industrial, 2018*)



Figure 3: TLT Turbo GMBH project's products (*About Siam Industrial, 2018*)

1.2 Organizational structure

The organizational structure of Siam Industrial Corporation Limited can be shown as:

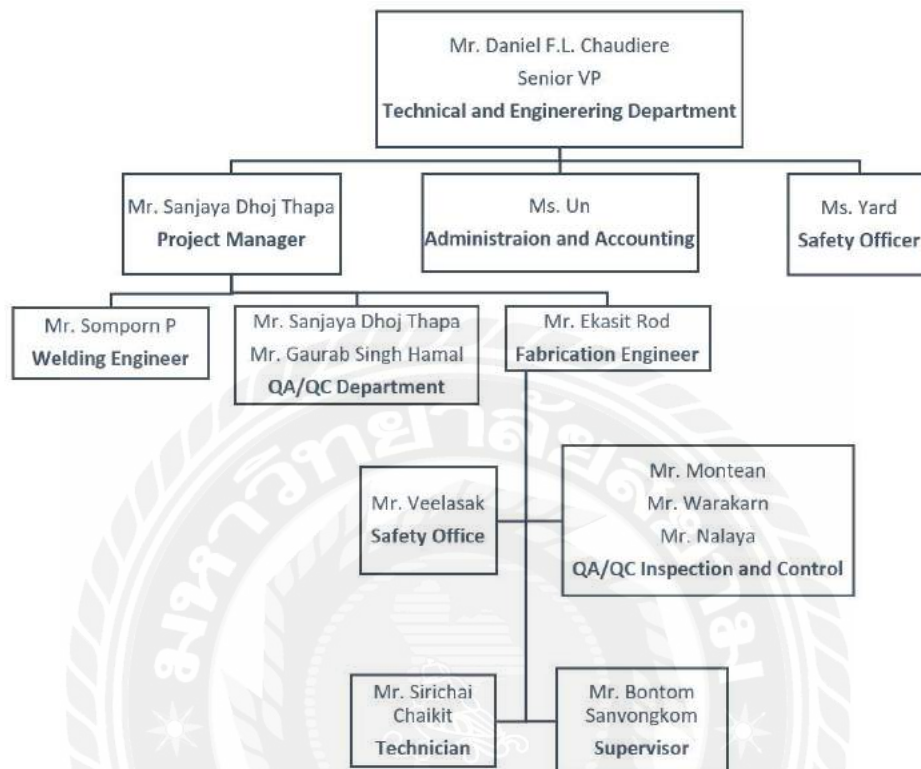


Figure 4: Organizational Structure at SICORP

1.3 Problems of the study

This Internship report is done as a partial fulfillment of the requirements for cooperative education in Siam University. In this internship, the student is able to know the challenges in industrial sector and face them to be ready to deal in future as a employee or as entrepreneur. Currently, there is lack of suppliers for raw material of the industrial equipment. I, as an intern at SICORP researched for the suppliers available for the company. The challenge in the engineering sector is to find the raw materials, inspection of the materials at WIP and shipping the products.

1.4 Objectives of the study

The objectives of this corporate education are:

1. To get familiar with industrial culture in Thailand.
2. To learn how to face real life challenges.
3. To apply theories and concepts, previously learnt in classroom, in real world situations and scenarios.
4. To know the industrial procedure for conducting a business.
5. To know how contracting and subcontracting works in project management.

1.5 Expected outcomes

The expected outcomes from this corporate education are as the following:

1. To know the procedures and work flow in industrial corporation.
2. To know how to deal with suppliers in an industrial sector.
3. To involve in documentation procedure of the company.
4. To know about project scheduling and cost evaluation.
5. To know about details of contracting and subcontracting.

1.6 Scope of the study

This internship report aims to investigate the cultural practice in industrial sector and shows details of the project management process. The target audience for this report includes researchers and students who have to gain about project management and the process of contracting as well as subcontracting.

1.7 Limitations and future work

There are some limitations to the current study as follows:

1. Due to lack of engineering skills, I could not understand the drawings of structures and the uses of machineries.

Since the SIC-EPC project is a core mechanical engineering project of SICORP, the project managers and assistant managers were always busy drawing diagrams and figures in AutoCAD and different other kind of designing apps. As a finance student, I was not able to understand those drawings and I could not comprehend the data and measurement of the different machineries used. The drawings however is the core part of the project and the project only begins when the drawings of the parts of the machinery is completed. The drawings made on the AutoCAD software were precise 2D and 3D designs related to the machineries of the project.

2. Due to language barrier, it is difficult to deal with Thai national suppliers.

During the communication process to the Thai suppliers for the materials, It was hard to communicate the message to them since they would not understand English easily and I could not speak Thai fluently. There were lot of confusion and I had to ask my supervisor to deal the supplier since I could not speak Thai. The language barrier has led to delay the process of supply in many cases while contacting the companies in Thailand.

3. Due to lack of technical skills, I could not know the parts and details of equipment in the company.

There were lots of industrial machinery being made by SIC-EPC Project. It was the first time I have heard the names of machineries in most cases. The measurement of the cutting, welding and fabricating the steel and carbon is the major action in the engineering service. I was not able to know the measurement details and I was not academically qualified for the

engineering project to know the details of the project. So this lack of technical skill has left me unknown about the measurement process of the steel and carbon fiber.

4. The websites and webpages of some companies do not provide contact information to contact.

The majority of websites do not provide enough information to contact them through email or phone. The website only provides the location of the company and the Introduction of the company only. The lack of such contact information has discouraged me to contact the company. The information about the contact number or mail would be very helpful for anyone trying to contact them.

5. Slow response from the companies

There were lots of companies who delay the response. Some companies took more than 10 days to respond to the mail. It is very difficult when the response time is slower since the project needs to be completed in time and the project cost should be evaluated in the planning phase of the project. When the response time is slow, The project manager needs to re-analyze the project cost and evaluate the budget which makes the project time high and cost of project increases when the project completion time becomes higher.

This research provides a groundwork for future for the future studies in industrial research. The limitations of this internship report points towards topics to be addressed in the future. The project management research will continue to evolve. The following are the few areas for future research.

- I. What additional tools are available to assist with the changes to the baseline of the project management process?
- II. How can QA/QC be assigned on a programmatic basis rather than project to project basis?

Chapter 2: Literature Review

The review of literature shows the epigrammatic description on the theories related to project management, project scheduling and cost evaluation.

2.1 Related theories

The following theories have evolved from project management literature:

2.1.1 Project Management

Project management is a disciplined technique to initiate, plan, execute and control a team of people to capture a specific goal or set of goals. Project management helps to conduct any activity using various kinds of tools, skill sets, knowledge to converge the requirements of the projects (Martin, 2016). Project management is majorly associated with engineering, construction, health sectors and information technology where set of procedures have to be completed thoroughly to finalize the functioning product. A project manager may use various tools to make sure the tasks are completed by each department. Project manager makes sure that the company has enough resources to test and build the final product (Investopedia, 2018).

In the APM (Association of Project managers) process, a project management starts with signing in the PID (Project Initiation Document) where the company invites everybody to a meeting and an agreement is made. In the PID, the managers need to define the quality, time and cost of the project. The most important driver known as the key driver of the project is identified in this process. The second step of the project management is to plan and list the tasks. It makes sure the managers don't miss any task during the project. This step may include the team to have meeting and brainstorm to get a random list and get the list structured into work breakdown structure. Once the list is prepared the estimation is required relative to time and cost of the project. A network of works to be done is made so that after completion one step another step won't be missed. The network diagram shows how to complete a project in the given time. A Gantt chart is made after the network diagram is prepared. It is the expected output of the project. A Gantt chart helps to communicate the ongoing procedures among people, plan the resources and monitor the progress of the project. (Croft, 2013)



Figure 1: Project Management process (Croft, 2013)

Project controlling also has to function through the process of project management. Project controlling helps to reinforce the goals and performance by carrying out the verification and controlling function during the project. The major role of the Project Manager is to make sure that the negotiated deal obtains the project's needs (Wallace). Project managers make sure the project needs are fulfilled by checking such things as:

- i. Specifications
- ii. Identification of all necessary components and work packages
- iii. Delivery dates
- iv. Quality/acceptance criteria
- v. Guaranteed functionality
- vi. Staffing levels
- vii. Training provision
- viii. Support arrangements
- ix. Adequate resilience
- x. Guaranteed performance (speed)
- xi. Service levels

Project managers are skilled personnel who makes project goals possible with their knowledge and expertise. They have the responsibility of planning, procurement and execution of the project. Their task is to manage communication, manage the team and to manage the project budget and scheduling (Wikipedia, 2018).

2.1.2 Contracting

Contracting is a process where two or more parties agree into the legal binding obligations. Contracting is set for actions if the obligation is not fulfilled. In a project management process contract is required to share the risk between the parties involved in the contract. The contract is set to make sure the project is fulfilled. While buying any goods or services from different sources, the buyer has to select a type of contract There are three types of contract and they are:

1. Cost reimbursable contract

A cost reimbursable contract is the contract where a party is reimbursed with all the allowable or predetermined expenses. The buyer pays for the project cost for all the expenses (Rogers, 2018). A cost reimbursable contract requires proper documentation of the costs of the project to ensure the full payment of the contractor for the work done. The contractor is paid an additional amount for compensation. A contractor may be paid with a fixed fee, on a percentage basis, on an incentive basis or as an award (Wiley, 2018).

2. Fixed price contract

A fixed price contract is the type of contract where a cost of project is predetermined for every specific services. The project cost, quality of product, quantity of product and the time period for completion of the project is known before signing the contract. The contractor is responsible for management of works to meet the needs of the project whereas the project team checks the quality of the product and schedule of the delivery to ensure the timely completion of the project. Fixed total cost contract is the type of fixed price contract where the service provider is responsible for all costs and profits. Fixed price contract with price adjustment uses an inflation adjusted price to maintain the volatility and price adjustment for long time period. Fixed price with incentive fee is a type of fixed price contract that uses incentive for completing a work for milestone achieved. While, fixed unit price contract is used when the service or materials could be measured but the accurate amount needed for the project is not known (Wiley, 2018).

3. Time and material contract

Time and material contract is the contract having both characteristics of fixed price contract and cost reimbursable contract. It is priced at per hour basis or maybe at per item basis. This kind of contract is generally used for small projects. Similar to the cost reimbursement contract, time and material contracts do not have defined completion date or limit of expenses. Due to no expense limit the customer has to pay the amount with no predetermined amount (Sharma, 2017).

2.1.3 Subcontracting

Subcontracting is a process where a subcontractor party signs a contract to perform the obligations of other's contract. In the process of subcontracting, the subcontractor is hired by contractor to perform any kind of task which may be

part of the project to overall project. A subcontractor is generally hired to reduce the risk, to fasten the project and to reduce the cost of the project (Wikipedia, 2018). Subcontracting is a worldwide practice in the construction industry and engineering industry. It allows the construction companies to focus on their core competences and, at the same time, it makes complex project possible to be delivered. General contractors bear total responsibility for the project works carried out by their subcontractors, it is their task and their risk to select a right subcontractor for any particular work. Although subcontractor management has been admitted to significantly affect the construction (Sławomir , Piotr , & Agata , 2017).

Basically, There are three types of subcontractor and they are; Domestic, Nominated subcontractors. A domestic subcontractor is a type of subcontractor who is chosen by the main contractor to carry out site works. A subcontractor is classified as domestic if they are freely selected. Whereas a nominated subcontractor is a type of subcontractor which is selected by the contractor by nomination process. The nominated subcontractor can be selected by the client itself to deal with the main contractor (UKessays, 2013). The major advantages of hiring a subcontractor in a project are:

1. Cost efficient
2. Time saving
3. Access to skilled manpower
4. Risk distribution
5. Quality assurance
6. Optimal use of resources

2.1.4 Cost evaluation

Cost evaluation is one of the major function of the project managers. Cost evaluation is important in every step of the Project cycle. The cost management function involves all the process to maintain the financial control. Cost forecasting, estimating, organizing , controlling and reporting are the functions of cost management (Georgas, 1986).

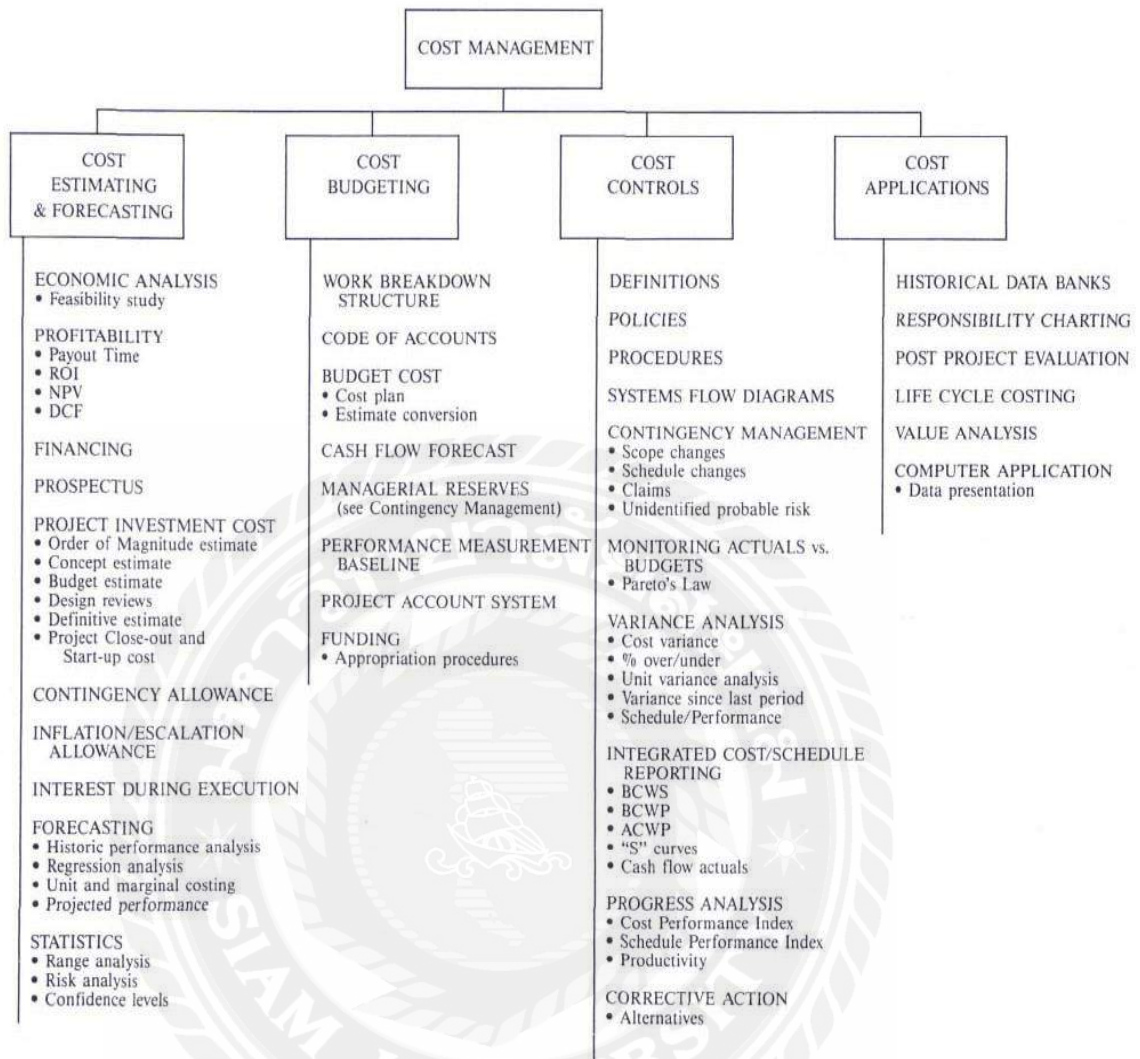


Figure 2: Cost management functions

The major functions of cost evaluations are:

1. Cost estimating

Cost estimating is the process to predict the quantity, cost and price of the resources required to complete the project. The accuracy of the estimation depends upon the level of project. Estimating is done by breaking down the total scope of a project into different parts, where then resources can be assigned (Costmanagement, 2018). The key components of a cost estimate are direct and indirect cost. Direct costs are those expenses which are billed exclusively to the specific project. Direct costs include project team wages, cost of resources, fuel for equipment and expenditure in any specific project risk. While indirect costs are those expenses include cost of quality control, security costs and utilities. These kind of costs are not directly billable to any specific projects since it is shared with various projects (Smartsheet, 2018).

2. Cost budgeting

Cost budgeting is the process of knowing details of the expenses associated with operating any project and developing a product. The cost budgeting process helps to know the amount of money expected to pay for the expenses for any project. To set the cost budget, first the costs should be identified and also consider the change in the rates charged per unit which allows us to get an average amount (Davoren, 2018). The major components of cost budgeting are; the base of cost estimate, contingency and management reserve. The base of cost estimate are resourcing the staff costs and consultant's fees, accommodation expenses, travel and subsistence expenses and expenses in capital items. The cost may be direct indirect, fixed or variable. Contingency is the amount set aside for identified risks. A management can presume some foreseeable risk may happen and set a reserve for that risk, it is known as the contingency. Similarly, a management reserve is the amount set aside for unforeseeable risk that may happen in the future. For those kind of risks management is prepared from the beginning by setting the management reserve (Association for Project Management, 2018)

3. Cost control

In project management cost control is a series of steps that a project manager takes into action to maintain the control over the project cost. It is an important factor to maintain the profitability in a business. Subcontracting is a method for cost control since many business find it cheaper to pay a third party to perform their tasks than to take job itself for the company. (Tutorialspoint, n.d.)The major ways to control costs are:

- a. Planning the project budget
- b. Keeping track of the costs
- c. Effective time management
- d. Project change control
- e. Use of earned value

4. Cost applications

Cost applications is the process in cost management level which is associated with the special applications of cost techniques that are not associated with any other cost processes. The cost applications includes the associated topics that affect life cycle costing, project cost evaluation etc. (Georgas, 1986). Using a Earned Value Analysis (EVA), a project manager measures the amount of work actually performed in a project. This is the method that allows the manager to forecast project's total cost and date of completion by using trend analysis. It provides information on how well the project is doing and it's deviation from the original plans (Reichel, 2006). The major baseline to measure the progress involves three key values, which

are planned value, actual cost and earned value. A planned value is the portion of the approved cost estimate planned to spend on the project. The actual cost is the total cost incurred during the project in the given period while the earned value is the value of the work actually done at the completion of the project (Cullen, 2016)



Chapter 3: Methodology

3.1 Project Details

The SIC-EPC project is one of the major project of Siam Industrial Corporation Limited. SIC-EPC facilities are situated at MRP facilities in Chonburi around 25 km to Laem Chabang deep seaport of Thailand. The MRP Engineering Co. Ltd is the one of the major contractor and subcontractor of SICORP. It is an engineering company equipped with variety of machineries to provide different kinds of services such as sandblasting, painting, milling, welding and fabricating the metallic components. There are two heavy machine shops, two fabricating shops and one grit blasting and painting shop in the factory. SIC-EPC basically works for fabrication and erection of standard, light or heavy weight structural works of industrial area. It can work steel plate to carbon, alloy and stainless grade steel. SIC- EPC is a department which is in charge of all the activities as EPC contractor for:

1. Engineering process design, equipment sizing
2. Testing campaign in laboratory and pilot plant
3. Detailed design and shop drawings engineering.
4. Conducting checks and measurement of fabricated items
5. Maintenance of the equipment and machineries.
6. Construction, installation works of steel fabricated components and structures for buildings & industrial works, equipment, machinery.
7. Piping construction and erection work.
8. Electrical & instrumentation installation work.
9. Testing, start-up, commissioning and test runs.
10. Project and construction management, supervision and coordination.

Since the company is core mechanical engineering corporation, during the internship I was focused mostly to the documentation and supplier selection procedure in the company. I could not know the details of structures made by SIC-EPC since the calculations, drawings of the structures and numerical integration of the parts was beyond my understanding. I was part of inspection on field visit with project manager to check on the subcontracted works. I was part of machinery loading and transporting where containers align and machineries are put inside to deliver it to buyers.

3.2 Roles and responsibilities assigned by the company

I was supervised by two supervisors; Mr. Sanjaya Dhoj Thapa and Mr. Gaurab Singh Hamal during the period of the internship. The supervisors assigned me task for each day. My first supervisor would assign me works of documentation, QA/QC format making, evaluating the cost of product through market research and finding the suppliers of a specific product. Whereas the second supervisor would check on the progress of my work and help me if there is any problem.

The roles and responsibilities assigned by Siam industrial corporation limited are:

1. **Supplier selection**

One of the major task in the internship tenure was to find out local as well as international suppliers for different products. The supervisor would assign the task to find out the raw materials in the market and I would have to redirect the potential suppliers to the project coordinator. During this process, I would research about the material needed thorough websites such as Alibaba. The materials mostly would be needed from Thailand since the shipping cost from the country itself would be very low compared to foreign ones. There would be problem while contacting the Thai national suppliers due to language barrier. The communication between the supplier and me would be mostly through email.
2. **Coordination in project as per schedule**

During the internship at Siam, I tried to learn and coordinate through each phase of project as per its schedule for smooth implementation of the project. Since the project moved faster when the engineering work is nearly finished, the contractors have to move fast with the documentation and the handover part. During the end of the project, it would be a hectic schedule and every document and inspection has to be done. The project scheduling is a tool that helps to communicate the employees of the project to ensure the right resources are used in right time to complete the project. All the tasks related to associated with the delivering the project in time is reflected through the project schedule. The project manager cannot efficiently manage the cost and resources of the project (Metafuse Inc., 2018).
3. **Project scheduling**

In Project management, Project scheduling is a tool used by the project manager which allows him or her to communicate with the parties and employees to ensure the right resources are used in the right time to complete the project in time. The project schedule shows the time to complete all the tasks. As an Intern I have to complete my tasks relative to the schedule to assist the project to complete in time.
4. **Cost evaluation**

The cost evaluation is done while budgeting the project which takes into account of time, money and expertise and resources needed. As an intern, while ordering goods and services, the project manager would ask me to provide quotation to most of the companies and select only the companies which have quality material with low cost. This helps the company to reduce expense on material itself.

5. Documentation

During my internship at SICORP, I used to prepare formats for the QA/QC documents and assist in other documentation procedure. The QA/QC documents are quality assurance and quality check documents that a project manager should provide to the buyer at the end of the project. This document includes the overall result of the item that is made. It includes the method used, inspection of the machine, Checklist for inspection, material approval inspection points for dimensional checking etc. The QA/QC documents differ from project to project since the machines or material needed would not be the same. Other documents that I worked on includes inspection sheet of variety of products, test and inspection plan of fan housing, suction box, diffuser transition piece which are products that SICORP made for a project.

6. Checking the product in WIP

The SICORP also subcontracted various of its projects to other subcontractors. Since the project has specific time period to be completed, there used to be an inspection for subcontractor's WIP. The supervisor or the project manager would go to the warehouse and check the work in progress and analyze the quality, quantity, and completion time to complete the project in time.

7. Assist during the inspection visit

Since SICORP is a contractor, there would be inspection from the buying party as well. The buyer would come to check the progress in the project. All the documentation should be properly verified during their visit. They would take photos and ask about the details of the products. The inspection documents would help to answer their questions.

Chapter 4: Results and Findings

4.1 Contribution of student made during the internship

During the internship tenure for three months at Siam Industrial Corporation Limited, I was working under SIC-EPC project at MRP Engineering Co., Ltd. There were two contractors at the same work place. The workplace has large machine shop, fabrication shop and blasting and painting shop. I was focused in the documentation and supplier selection section in SICORP. In our department under SIC-EPC project, there were 2 employees at MRP Engineering Co., Ltd. It has been a privilege working at SICORP's major project which is one of contractor for core mechanical engineering services in Thailand. My contribution for SICORP is that I assisted the project manager to select some suppliers inside and outside of the country. I assisted my supervisors to prepare QA/QC documents and other documentation procedures.

Some of the contributions I made during my Internship at the company are:

1. Market visit
2. Assisting Project Manager
3. Documentation
4. Market research
5. Cost benefit analysis
6. Checking WIP of subcontractors

4.2 Details of related learning process and new knowledge student has received

The SIC-EPC project under SICORP is one of the major core mechanical engineering contractor on Thailand. During my tenure at SICORP and stay at Bangsaen, This internship has been valuable to me and some of my gaining form this internship are:

1. Increased in formal Communications

During the internship I had to contact the suppliers by using electronic mail. Due to increase in formal way of mailing, student is able to learn more about formal communication skill. Since the quotations has to be given in a formal way, there is increase in formal communication during the period of internship. A formal mail would help the suppliers understand the quotations provided for the goods ordered. Before sending an email the purpose of the mail should be known. The sender should identify themselves to make the receiver easy and convenient to respond. The closing is important in an email because it helps the receiver know who is contacting them.

2. Networking in steel manufacturing companies
Siam Industrial Corporation Limited works for fabrication and erection of standard, light or heavy weight structural works for the industrial sector. It is a contractor in Thailand that manufactures various types of industrial equipment according to the demand of the customers. The raw materials needed for the company is mostly ordered from China. There are various companies in China that manufactures industrial steel, I as a intern should be able to select the companies providing the raw materials with low cost and high quality. To be able to do so, I have had to contact different companies and proved them the company information and quotations for the materials required. They would send the price for product and I would have to forward the feasible price to my job supervisor.
3. Association with industrial culture
This 3 month internship at Siam Industrial Corporation limited is my first experience of work in industrial sector. This has been a whole new level of experience, working in an engineering and manufacturing company in Thailand. This is the first time experience in the industrial and manufacturing sector.
4. Punctuality and discipline
One of the major goal is to be punctual and arrive office in time. Since our apartments were about 10 km far from the work place, we could not miss the vehicle going to the office. Being punctual is the first priority after waking up in the morning, every day for the 3 months. Being punctual to work is one of the major outcome from this internship experience.
5. Organization ethics
Organization ethics is principal and standard by which the organization or the company operate in day to day basis (Suttle, 2018). Organizational ethics can help the organization in its reputation and productivity. Organizations which lacks ethical practices fail eventually. We can see the examples of Enron and WorldCom scandals as the ethical failure which lead to bankruptcy of the organization (Wikipedia, 2018).
6. Taste of Thai culture and festivals
During the internship there was a festival widely known in Thailand as Songkran. The company was closed for the festival but the job supervisors and friends were gathered together to celebrate the festival. It is similar to the Hindu festival called 'Holi' but Holi is celebrated with colors while Songkran with water. The festival is celebrated as a Thai new year and beginning of summer.
7. Exposure to Chonburi province and Bangsaen area
As our apartments were at Bangsaen area, we had an exposure outside of the Bangkok. Our location was about 110km from the Siam university. This

exposure has helped us to gain insight of Thailand and know the cultural practice in different location in Thailand. We also had to visit a workshop in Chonburi in search of material for the machinery construction.

Since my job supervisor was a project manager, I was able to learn and hear from him. He would share his knowledge and experience to us about the works done as a project manager. The major steps for managing a project can be tabulated as:

- a. Project Initiation
- b. Project Planning
- c. Project Execution
- d. Project Monitoring and Control
- e. Project Closure

Table 1: Steps of managing a project (Bisk, 2018)

- a. Project initiation: Project initiation is the first step in project management. In this step the project is defined and checked if the project is feasible or not. Feasibility test is done in this step and the unfeasible project are abandoned. (Bisk, 2018)
- b. Project planning: Project planning is the second step on the project management process and here, a project goal and objective is set. SMART goals are set to define the scope of the project. This step involves the identification of the cost, quality and available resources to complete the project. The project planning also includes cost budgeting and completion estimation of the project. (William R, 1993)
- c. Project execution: During the execution phase of the project the work begins. The work and building what needs to be delivered in time is done in this step of Project management. Allocating the resources and keeping the project members focused is the goal of project managers in this phase. (Mulholland, 2016)
- d. Project monitoring and control: Project monitoring and control is necessary to guarantee to deliver the customers what they were promised. The Project managers may have to adjust the schedules and resources to make the project complete in time. (Smartsheet, 2018)
- e. Project closure: Project closure is the phase when the project is completed. The contractors and sub-contractors who are hired during the project are terminated in this period. The project manager reviews and evaluates the project so that the mistakes will not be repeated in the next project (Bisk, 2018).

I learned this process of project management through my supervisor. However, I could be only the part of project monitoring and control since the engineer should be hired to understand the other phases of project at SIC-EPC. In spite

of not being part of all the phases in the project, I have learned the project details and observed the works of my supervisors.



Chapter 5: Conclusions and Discussions

In conclusion, the internship for three months at SIC was better than I expected. I feel lucky that I got this chance to explore my theoretical knowledge with the help of professionals and experts of SIC. It was a nice experience working as an Intern in Siam Industrial Corporation. All the staffs of SIC as well as MRP Engineering were cooperative and helpful. My stay at SIC was a memorable, knowledgeable and fun. It was all possible because of my supervisors at SIC. In my three months long internship program, I learned many things about project management and contracting and subcontracting in an industrial corporation.

5.1 Self-assessment as future professional

This three month internship at SICORP has helped me to gain new experiences and knowledge. This gaining it is definitely going to be useful for me in my future career. After the internship I have a better understanding of an industrial corporation. I believe this internship has been an addition to my theoretical knowledge and also it has been helpful for addition to my previous work experience and academic development. I believe that by this internship opportunity, I have been able to enhance my time management, social skills and analytical skills. Since this is my first experience of working as an intern outside of the country, the practical education has helped me to improve my professional and ability to work in a multicultural environment.

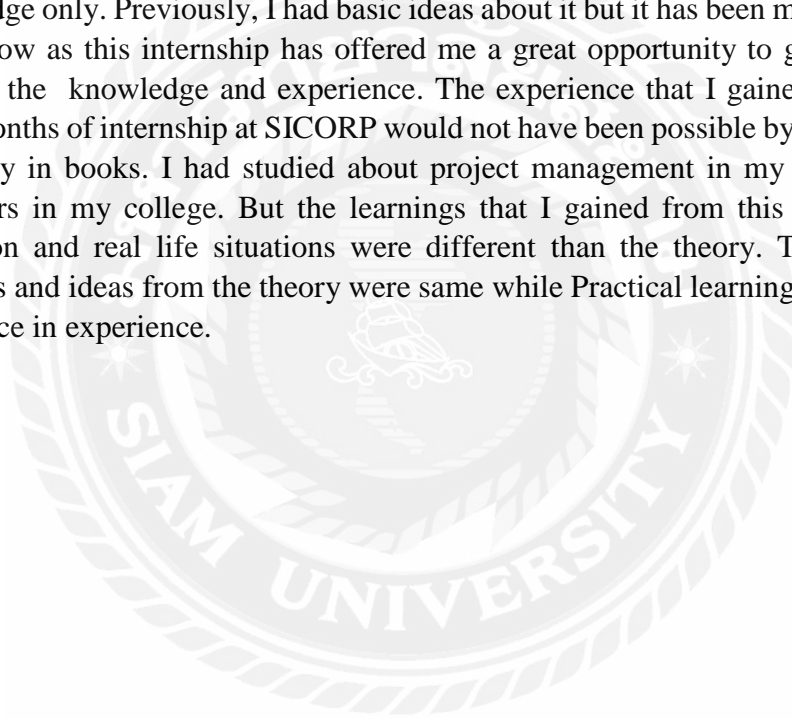
While working in SICORP, the communication between the contractors was not only limited to Thai nationals. It felt like working in Thailand by connecting through whole world since SICORP deals with clients from all over the world. There are numbers of suppliers, clients, contractors and subcontractors in different parts of the world. The communication between all the parties should have been done to complete a project. In my understanding, working in the engineering company for three months has actually given me a glimpse of technicality on an industrial corporation. There are cases, where companies do not try to contract or subcontract the project to other parties due to the risk of reputation loss and time consuming assumption. I actually found that contracting and subcontracting a job to any company, if it is feasible, would be profitable in most cases since the contractors and subcontractors have the resources to complete the project which a single company may not have.

Since I am a BBA student majoring in Finance and banking this knowledge about project management, contracting and subcontracting is very helpful for me in the future. In cases like if I may have to hire any kind of job to contractor or subcontractor for my business in the future, the learnings and knowledge from this practical education is essential. Thus, this internship is helpful in my future career as I aspire to become businessperson. The knowledge I gained from Siam Industrial Corporation about contracting, subcontracting, project management, project scheduling and project evaluation is very helpful in business as well.

5.2 Comparison of practical learning VS theory

Theoretical studies from the class room are easier to understand and seems straightforward. But without the practical knowledge the core of the study is incomplete. Theoretical knowledge helps to understand the related issue with the experience of other people while the practical learning helps the students understand the situation on their own. Practical knowledge and experience is required for deeper understanding the concepts and ideas in real life situations. Providing practical education helps for skill improvement which can be beneficial for students to explore the real life challenges.

During this internship at SICORP, I got idea about the process of managing the feasible project, the process of project scheduling, cost evaluation, contracting and subcontracting. This learning previously had been limited to my theoretical knowledge only. Previously, I had basic ideas about it but it has been more clear to me now as this internship has offered me a great opportunity to grow and develop the knowledge and experience. The experience that I gained during three months of internship at SICORP would not have been possible by learning as theory in books. I had studied about project management in my previous semesters in my college. But the learnings that I gained from this practical education and real life situations were different than the theory. The basic concepts and ideas from the theory were same while Practical learning makes a difference in experience.



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