

A PROJECT MANAGEMENT CASE STUDY OF PT. QDC TRAF0 BAY SUBMISSION 150 KV AT LUBUK LINGGAU, SOUTH SUMATERA

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Abstract – PT. QDC Technologies is a company that works in the telecommunication and power infrastructure service sector in Indonesia. As an EPC (Engineering, Procurement, and Construction) company, it is important to have a well plan project managemnet to ensure that every project meets its project's objectives. One of PT. QDC's projects is the Trafo Bay Submission construction in Lubuk Linggau, South Sumatera, which project implementation run behind its project plan. This research is aimed to improve project management of PT. QDC to make a more effective and efficient project plan.

Keywords – project managemnet, fishbone diagram, trafo bay construction project, case study

Intorduction

Electricity is a vital requirement for every country because nowadays, almost every wheel of life and economic activity are now depending on the availability of electrical energy. Because of that, in the 5-year leadership program of Jokowi, President of Indonesia, will build a total of 35.000 MW power plants. The government will divide this project to several parties, 10.000 MW will be carried out by PLN and the rest of 25.000 MW will be submitted to private companies. That government's decision is a huge opportunity for companies whose work in that field. [1]

As a telecommunication and power infrastructure company that work on construction and infrastructure, it is very important for PT. QDC Technologies to have a well plan project management for every project that the company does. Based on the meaning of the company's name, QDC means "Quality, Cost Effective and Timely Delivery of Integrated Communication Systems", it makes every part of project's life cycle is important. To make it happen, one of those crucial things that company have to manage is their project management.

In the end of 2012, PLN did a partnership with PT. QDC as their main sub contractor to build a Tafo Bay Submission in Lubuk Linggau. In its completion, the project was late and caused a loss for the company. Due to the lateness of project's completion, company still hesitate to conduct this type of project, while there is abound opportunity for this project apparently.

According to the background above, the objective of this case study is to compare the project management of Trafo Bay construction project in Lubuk Linggau, South Sumatera with steps on conducting project based on Project Management Book of Knowledge (PMBOK). The comparison will be used to improve company's project management plan.

Background Information

Company Profile

Began operation in July 2003, PT. QDC Technologies is uniquely positioned to deliver high quality competitive and flexible products and services to the market. By having "Becoming customer's ideal partner in delivering infrastructure, network, system and services" as their vision, PT. QDC tries to achieve their vision by being a leader in developing and maintaining communication and power infrastructures in Indonesia.

Company's Product and Service

Several product and services that QDC offered are :

1. Feasibility Research
2. Consultancy
3. Planning and Design
4. Project Management
5. Material Management
6. Contract Management
7. Network Integration
8. Systems Engineering

Business Cycle of Project

A project's life cycle contains a series of major steps in the process of conceptualizing, designing, developing, and putting in operation the project's technical performance "deliverables" [2] PT. QDC business cycle from approaching the project until hand over its project completion to the customer will be described in Figure 3.1. The process in Figure 3.1 include bidding process, project hand over, project planning, project execution, project monitoring and control, and also project closing.

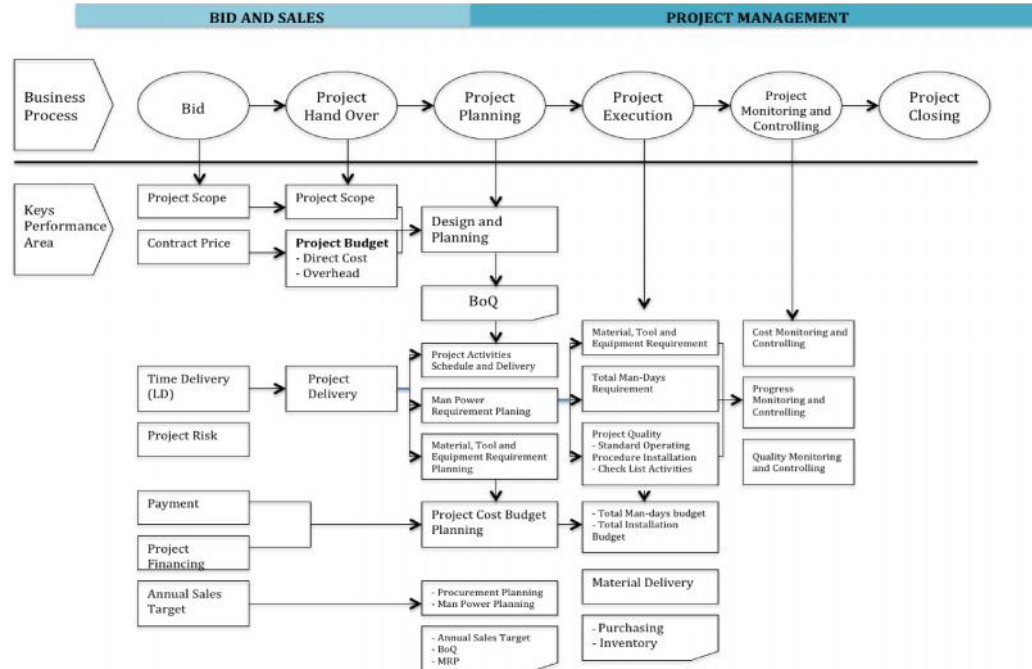


Figure 1 PT. QDC's Business Cycle of Project

Sequence of Events and Data

Research Methodology

This research was conducted using qualitative approach and secondary data research. The qualitative approach consists of an interview with Redi Subekti as Director of PT. QDC, Marungkil Sagala as Project Manager of Trafo Bay Submission at Lubuk Linggau, and Herni Yulianti as Quality Manager of PT. QDC, which was recorded and transcribed. The transcript is on the Appendix. Secondary data consists of the project's audit report and the result of the meeting. The data from the interview and secondary data research was analyzed using the steps on conducting project based on the Project Book of Knowledge Management. All the data was gathered and used to do the analysis process.

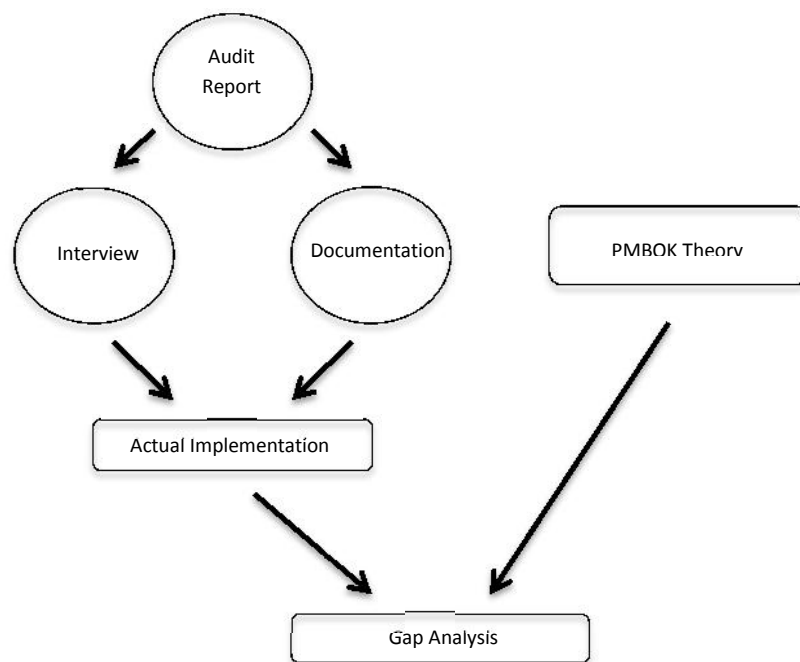


Figure 2 Conceptual Frameworks

Trafo Bay Construction Project

Function of Trafo Bay :

1. Switch Yard (Switchgear)
2. Transformator Power

Key Player of the Project

The key role of this project that has a great responsibility towards the completion of this project are:

1. Project Manager
2. Field Supervisor
3. Project Administrator
4. Design Engineer
5. Procurement Manager

Project Outcome

From the audit result, there are 4 scope of audit such as material, financial review, timeliness project delivery and placement or use of resource of manpower. From the audit, the timeliness project delivery is having lateness for all activities. The lateness first occurred because of the lateness of

design and survey, which has to be done in 14 days but it took 120 days for the actual implementation. The lateness of design and survey affect the lateness to all activities afterwards, which took time until 103 days of lateness in the project's completion. However, the used of manpower resource is accordance with the project plan, despite it still need to add 3 more workers for sub contractor.

Problem of the Case

Firstly, the project's contract price was Rp. 9.093.465.859, but because of several changes on scope baseline, the project's contract price decrease to Rp. 8.149.899.603. And based on the contract, the project should be finished within 300 days of works, but in the actual implementation, the total days of work to complete the project was 403 days. If the contract did not get revised and company did not get additional of 75 days of works, company would be loss for IDR. 843.212.288. But because of the contract revision, the calculated total lateness completion of project is only 28 days of work and company got penalty of IDR 228.197.188. The lateness of the project affected both for company, client and sub contractor. Because of the lateness, company will get lots of disadvantages, such as profit-loss, time loss, and other losses. Profit loss occurred from the expansion of holding inventory or the repetition on material delivery that cause the increased cost of the project while client will just pay the settlement money when the project was 100% completed. Company's reputation will also affected from the lateness, which cause loss of trust from others clients. In the other side, client will also get disadvantages from the lateness completion of project, one of it is that they can not get the value from the project immediately.

Discussion

This chapter explain about the project management analysis based on the Project Management Book of Knowledge (PMBOK) the fifth edition that include project process from it's initiatng until project closing. Key benefit of analyzing it is to know what process that PT. QDC did for the construction of Trafo Bay in Lubuk Linggau and what process that PT. QDC did not do based on the PMBOK.

Table 1 Project Management Process Group and Knowledge Area Mapping [3]

Knowledge Areas	Project Management Process Group				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
Product Integration managemen	1. Develop Project Charter	2. Develop Project Management Plan	3. Direct and manage project work	4. Monitor and control project work 5. Perform Integrated Change Control	6. Close Project or Phase
Product Scope managemen		1. Plan scope management 2. Collect requirements 3. Define Scope 4. Create WBS		5. Validate Scope 6. Control Scope	

Knowledge Areas	Project Management Process Group				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
Project Team Management		1. Plan schedule management 2. Define activities 3. Sequence activities 4. Estimate activity 5. Estimate activity duration 6. Develop schedule		7. Control schedule	
Project Cost Management		1. Plan cost management 2. Estimate cost 3. Determine budget			
Project Quality Management		1. Plan quality management	2. Perform quality assurance	3. Control quality	
Project Human Resources Management		1. Plan human resource management	2. Acquire project team 3. Develop project team 4. Manage project team		
Project Communications Management		1. Plan communications management	2. Manage communications	3. Control communications	
Project Risk Management		1. Plan risk management 2. Identify risks 3. Perform qualitative risk analysis 4. Perform quantitative risk analysis 5. Plan risk response		5. Control risks	

Knowledge Areas	Project Management Process Group				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
Project Procurement Management		1. Plan procurement management	2. Conduct procurement	3. Control Procurement	4. Close procurement
Project Stakeholder Management	1. Identify stakeholders	2. Plan stakeholder management	3. Manage stakeholder engagement	4. Control stakeholder engagement	

Gap Analysis

Gap analysis is a distance analysis between where you are today versus where you need to be in order to meet your project requirements, it is a business assessments tool and a process through which a company can compares its actual performance to its expected performance. Developed by Parasuraman et al. (1985), gap analysis was made for evaluating service quality and its determinants. [4] Key benefit of gap analysis is that it is also used as a problem-solving phase, which aims at finding ways to fill the gaps in order to reach the desired states. From the analysis of differences between project's theory and implementation based on the PMBOK, table of gap analysis is shown below.

Table 2 Gap Analysis Between Theory and Practice

STAGE	PRACTICE
1. INITIATING	
1.1 Develop Project Charter	Not practiced for all projects
1.2 Identify Stakeholders	Practiced, but not documented
2. PLANNING	
2.1 Develop Project Management Plan	Partially practiced but not in a central document
2.2 Plan Scope Management	Fully practiced
2.3 Collect Requirements	Fully practiced
2.4 Define Scope	Fully practiced
2.5 Create WBS	Not practiced
2.6 Plan Schedule Management	Fully practiced
2.7 Define Activities	Fully practiced
2.8 Sequence Activities	Practiced but not in the form based on PMBOK
2.9 Estimate Activities Resources	Practiced based on hypothesis and analysis
2.10 Estimate Activities Duration	Practiced based on hypothesis and analysis
2.11 Develop Schedule	Fully practiced
2.12 Plan Cost Management	Fully practiced
2.13 Estimate Cost	Fully practiced
2.14 Determine Budget	Fully practiced
2.15 Plan Quality Management	Fully practiced
2.16 Plan Human Resource Management	Fully practiced
2.17 Plan Communication Management	Fully practiced
2.18 Plan Risk Management	Not Practiced
2.19 Identify Risks	Not Practiced
2.20 Perform Qualitative Risk Analysis	Not Practiced

STAGE	PRACTICE
2.21 Perform Quantitative Risk Analysis	Not Practiced
2.22 Plan Risk Response	Not Practiced
2.23 Plan Procurement Management	Fully practiced
2.24 Plan Stakeholder Management	Partially practiced
3. Executing	
3.1 Direct and Manage Project Work	Fully practiced
3.2 Acquire Project Team	Fully practiced
3.3 Develop and Manage Project Team	Fully practiced
3.4 Manage Communication	Partially practiced
3.5 Conduct Procurement	Fully practiced
3.6 Manage Stakeholder Engagement	Fully practiced
4. Monitoring and Controlling	
4.1 Monitor and Control Project Work	Fully practiced
4.2 Perform Integrated Change Control	Fully practiced
4.3 Validate Scope	Fully practiced
4.4 Control Scope	Fully practiced
4.5 Control Schedule	Practiced by using S-Curve activities
4.6 Control Costs	Fully practiced
4.7 Control Quality	Fully practiced
4.8 Control Communication	Fully practiced
4.9 Control Risks	Not practiced
4.10 Control Procurement	Fully practiced
4.11 Control Stakeholder Engagement	Fully practiced
5. Closing	
5.1 Close Project or Phase	Fully practiced
5.2 Close Procurement	

Conclusion

Problems that occurred during the process of Trafo Bay construction project in Lubuk Linggau could happen because of the unprepared and unknowledgeable project team to execute the first mechanical electrical project for PT. QDC. To run the first project that company have not done before, it is really important for the project team to gain as much as possible information about the project and make risk analysis to prevent problems that could occur during the process. Based on the analysis, some most suitable suggestions for this project from each stage are:

1. Initiating Stage
 - Make a project charter for all projects
2. Planning
 - Identify and calculate risk that could occur then make strategies to face it
 - Use consultant for activities that company not capable to do (in this case: design engineer for mechanical electrical)
 - Conduct visit on site before project's implementation to make sure all details from site is suitable with project plan
 - More calculate and consider on cash flow project because the agreement of payment for this project creates disadvantage for company
 - More careful on signing contract and analyze every details written from the contract
 - Upgrade knowledge by gain as much as possible references from similar projects that has been completed
 - Made work breakdown structure to ensure all activities requirement and scope

- Make a better forecast and material purchase to avoid sudden demand that is urgent, related delivery, and accumulation of goods on site
- 3. Executing
 - Well-known with material and price to increase company's opportunity to gain cheaper material and increase profit
 - Upload and update all data to ERP system to make more efficient and effective communication management and avoid miscommunication
 - Create more effective communication between other parties by intensify the communication
 - Company consistent on payment procedure for all projects to ensure company cash flow run according to plan
- 4. Monitoring and Controlling
 - More intense control from upper management
 - Collect chronologies and design revisions to be used as a base learning for future projects
- 5. Closing
 - Audit should be conducted by audit team, not by representative from the project to ensure that the audit results can be neutral and contains honest information

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