

The Cost Effectiveness in the Engineering Procurement and Construction (EPC) Contractors Industry in Indonesia, the Implementation, Obstacles and Application for Logistic Persons That Handled the Custom Matter

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Abstract

Cost efficiency and cost effectiveness in a business is absolutely necessary. Accurate calculation of costs will determine competitive advantage. In the Contracting Services Industry sector, Engineering, Procurement and Construction (EPC) the joint use of several resources in carrying out projects is absolutely necessary to achieve company efficiency. A relatively appropriate method of calculating costs to overcome this is by applying the Activity Based Costing method. Application for the Logistic or Procurement Persons that handle the custom matter is a must.

Keywords

cost; activity based costing; engineering procurement; construction company



I. Introduction

In today's era of global competition, companies must compete fiercely with similar companies in order to win the competition, because of the intense competition so that companies can "survive", they have to make efficient of the costs.

According to Islahuzzaman (2011:3) Companies operating in contemporary environments require more up-to-date information to meet the requirements of the new environment. In particular, contemporary cost management systems are more detailed and more accurate than traditional cost base calculation systems, and as such, require greater costs to operate. The advent of contemporary systems shows that in many cases the benefits of more sophisticated systems are greater than usual. On the other hand, the continuity, existence and dependence on traditional systems show the opposite in a company.

An Engineering, Procurement and Construction (EPC) Company is a one type of contracting Service Company engaged in construction services for the purposes of Energy and Industrial Plant. The difference between this company's service products and other contracting service companies is the number of suppliers, subcontracting and systems that are more complex than other contracting services that are generally engaged in the construction of facilities for only civilian purposes.

The main business of the Engineering, Procurement and Construction (EPC) companies is usually working on projects such as oil and gas installations, mining, power generation, chemical and petrochemical plant construction. This work is very complicated and requires special attention and careful calculation of costs in order to achieve optimal benefits.

For example if the company gets a job to build a geothermal power plant installation, then the company must involve a lot of human resources, tools, suppliers and subcontractors. At least it needs suppliers for turbines, mechanical equipment, measuring

instruments, electrical measuring instruments, cables, cable tray, low-voltage switchgear, medium-voltage switchgear, switchyard, distribution panels, lamps, electric poles of various types and sizes, bulk material, pipes, valve, pipe support, fire fighter equipment, fire alarm equipment, anti-lightning equipment, telecommunications equipment, computer and control equipment and so on. Likewise, tools and equipment for construction require at least various types of cranes, forklifts, trucks, dump trucks, excavators, bulldozers, mixers, vehicle for personnel carriers and so on.

In the engineering and design stage it also requires high accuracy works, for example if the area has high sulfur content, then some material must be designed to anticipate the impact in the future. For example the pipe specifications must be special so that it can last a long time even in environments with high sulfur content, depend on economic of scale of investment of that power plan.

In a period the company usually gets / does several jobs at once which is commonly called getting / working on several projects. This is actually an opportunity to do work effectively and efficiently when utilizing existing resources simultaneously. Utilization of resources simultaneously requires very complex calculations but to simplify the effectiveness and efficiency of the calculation the costs can be done using the effectiveness and efficiency cost method. One of the method we also called as "Activity Based Costing" methods.

II. Review of Literature

2.1 Costs

According to Hansen and Mowen (2004: 40), the notion of costs is: "Costs are cash or cash equivalents that are sacrificed to obtain goods and services that are expected to provide benefits now or in the future for the organization." According to Mulyadi (2008: 8) costs are "the sacrifice of economic resources measured in units of currency that have occurred or are likely to occur for certain purposes."

2.2 Definition of Production Costs

According Mulyadi (2001: 14) production costs are: "Production costs are all costs associated with the production function or processing of raw materials into finished products that are ready for sale".

In the business activities of the engineering procurement & construction contracting service industry, processing and assembling of raw materials means connecting all components (parts & equipment), labor and tools into a series to produce a process that can be operated in a sustainable manner as in a factory where previously it had to go through a process pre-commissioning & commissioning before operation.

2.3 Types of Production Costs

In the business activities of the service industry, engineering procurement & construction contractor production costs include:

1. Component & material component costs
2. Labor Costs
3. Overhead Costs
 - a. Cost of consumables
 - b. Electricity costs, telephone & water
 - c. Equipment repair and maintenance
 - d. Cost of importing goods & transportation

- e. Goods / vehicle rental fees
- f. Etc.

2.4 The Methode of Determining the Cost of Production

According to Rini (2017: 123): "The method of determining the cost of production is a way to calculate the cost elements into the cost of production, there are two approaches namely Full Costing and Variable Costing".

1. Full Costing

According to LM Samryn (2001: 63) Full Costing is: a method of determining the cost of production that takes into account all production costs consisting of raw material costs, labor costs and overhead without taking into account their behavior. The income statement generated from this approach is widely used to meet the needs of outside parties. Therefore the system must be adjusted to "Generally Accepted Accounting Principles" to guarantee the information presented in the report.

2. Variable Costing

According Muladi (2008: 18): "Variable Costing Method is a method of determining the cost of production which only takes into account the elements of production costs in the form of raw material costs, direct labor costs and overhead costs that behave variable".

The main difference between the Full Costing method and the Variable Costing method actually lies in the fixed cost treatment of indirect production. In the Full Costing method, an element of production cost is included because it is still related to the manufacturing of products based on tariffs (budget), so that if production is actually different from the budget, then there will be a deficiency or excess loading. But in Variable Costing treats fixed indirect production costs not as an element of production prices, but is more appropriate to be included as periodic costs, namely by charging the entire period to which the costs are incurred so that in Varying Costing there is no more or less charging.

According to Islahuzzaman (2011: 4) Use of a traditional and contemporary base price calculation system (Activity Based Costing) simultaneously also shows indirectly the needs of the business world to be able to compete by allocating the activity costs of these functions. Using a system framework allows business entities to make a clear distinction between traditional and contemporary approaches in calculating the cost of an object cost. Compared to ABC, traditional systems report higher unit costs for high volume products and lower unit costs for low volume products. That is because the allocation of all overhead in a traditional system is based on volume. In a volume-based system, products with higher volumes will be allocated a larger share of all overhead costs, including costs not related to volume.

2.5 Production Cost Collection Procedure

According to Rini (2017: 124): Basically there are two kinds of systems producing products, namely:

1. Job Costing is a product costing system that accumulates and imposes costs on certain orders. Usually used by companies that have a wide variety of products and services. Because each product or service may require different operations, the best way to determine the cost of a product or service is based on specific orders or individual customer orders for one or more products. The cost per unit of each product or service is calculated by dividing the total order cost by the units produced or services produced.

3.2 Application to the Personnel that Handled the Custom Matter

In the figure 1, for example, we can see that Reonaldo as a Logistic staff handled the Custom Matter for Project T 3135, Project 94323 and Project 95307 also handled for Proposal 99444. If the company get more than one project, for efficiency the company don't need to recruit Logistic People again to handle 3 (three) projects and 1 (One) Proposal, but must optimize 1 (One) persons to handle the custom matter, this case depend on the project size. In the figure 1, we can see that Mr. Reonaldo visited harbor in Monday for project T 3135.

Basically in Indonesia, handling customs affairs for imported goods can only be done by customs handling companies (PPJK – Perusahaan Pengurusan Jasa Kepabeanan) that have been registered with the Director General of Customs and Excise, so that the logistic personnel of EPC companies only need to appoint PPJK companies that have become partners. So the task of logistics personnel is basically to choose and appoint a PPJK to take care of the handling of importing goods. Optimization of Logistic Personnel is a must to get efficiency for the EPC Company.

The obstacle is that sometimes personnel are reluctant to fill in the Time sheet so the supervisor must be able to control it and force each member to fill in the Time Sheet diligently.

3.3 Application for Heavy Equipment and Project Equipments

Basically the rental of heavy equipment from a rental of heavy equipment is calculated for a certain period, for example weekly, monthly or even daily sometimes can be rented by the hour.

If the company are working on the projects in a relatively close location, the use of heavy equipment and other project equipment can be optimized. This of course requires careful calculation which is usually done by the "Project Control department" which must work together to optimize the use of heavy equipment for these projects. The use of worksheets for calculating the use of heavy equipment can be used.

For example an 80 ton crawler crane is leased for a period of one week, project A uses it on the first, third and fourth day, if it wants to be optimized then the Crawler Crane must be used by project B on the second, fifth, sixth and seventh day. This certainly requires careful planning by the Project Control section in order to achieve optimal results. The completion of worksheets by riggers must be strictly monitored by supervisors. There is a problem that usually often occurs when working on projects in one company, which is the cost of throwing each other, for example the cost of running a crawler crane from project A to project B it will be borne to project A or project B? so as vice versa. This must be considered and if necessary a procedure is made by the project management.

3.4 Application to Overhead Cost

The cost for using office equipment & stationeries can be done by using the stationeries request form that provides these tools for use by any project.

For the use of computers for two or more projects, a computer program that is integrated with a computer operating system and financial accounting should be made so that if A is working on drawings for Project A and then Project B and Project C, the computer system will record it and connect immediately with a computer program in financial accounting. Of course, to achieve this, companies need to employ skilled and trained programmers.

For the cost of duplicating documents or what is commonly called a photocopy, it is better for each photocopy machine operator to provide a form to record the documents

used for any project. Or the photocopy machine is added a tool or program to record the document used for any project where the tool is directly connected to a computer program in the financial accounting department. Of course this must be supported by a reliable and sophisticated photocopy machine supplier. Some of the Engineering, Procurement and Construction (EPC) Contractor Service Industry companies that located in Japan are already utilizing photocopiers with the above technology so that they do not require fees to pay an operator. Each user uses a card in accordance with the project being worked on, so that the detailed cost of photocopies per project can be directly recorded by the system.

There are some obstacles that are relatively difficult to implement the Activity Based Costing method, for example if several Project Teams who work on several projects work using in one office building. The use of elevators, lighting, cleaning and so on becomes relatively difficult to calculate using the Activity Based Costing method.

By implementing various systems and technologies as mentioned above, it is hoped that the Engineering, Procurement and Construction (EPC) Contractor Services Industry company can effective costs by recording based on Activity Based Costing methods so that companies can be more efficient in a highly competitive era like now.

IV. Conclusion

The use of the Activity Based Costing method is absolutely applied to the Engineering, Procurement and Construction (EPC) Service Contractor Industry company in Indonesia to get the cost effectiveness if you want to excel in the competition.

In the era of information technology sophistication as it is happening right now (the industrial revolution era 4.0), every Engineering, Procurement and Construction (EPC) Service Contractor Company and Industrial Manufacturing company must manage its information technology resources so that it can directly apply Activity Based Costing methods in each of its activities. Therefore they must have reliable information systems specialists to work on programs related to the application of Activity Based Costing methods.

The lack of research into the application of the Activity Based Costing method for effectiveness in the Company for Engineering, Procurement and Construction (EPC) Contracting Services Industry in Indonesia is certainly an opportunity for researchers to research more about the benefits of this Activity Based Costing method.

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