COST IN THE PROJECT MANAGEMENT

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Abstract

Many, if not most, project managers come from areas of expertise outside of business, and most do not have the formal education in business, accounting, or finance required to take their skills to the higher level. Project management accounting is much more than considering how project income and expense impact the general ledger. This article contain fundamental information on different areas of accounting and financial expertise, such as cost accounting and budgeting.

Key words: project management, accounting, cost, cost clasification

INTRODUCTION

Over the last few decades project management has moved from its roots in industries such as construction and defense into the mainstream of Slovak business. Many different industries, in particular the service sector, rely heavily on project management as an integral part of a successful strategy. In support of the widening importance of project management, a number of important professional organizations, such as the Project Management Institute, have been created and are thriving in the twenty-first century.

Project management accounting is much more than considering how project income and expense impact the general ledger. The topic encompasses traditional accounting, cost accounting, budgeting, financing, cash flow, and earned value along with the more quantitative subjects. Project management accounting also includes such areas as strategy and executive decision making, portfolio management, and the more traditional phases of project management.

1 DEFINITION OF THE COST IN PROJECT

Cost is the measurement of resources that must be expended in order to obtain an object or complete an activity. Cost is usually expressed in monetary terms, as in employee time; the materials to manufacture an object may be represented by their monetary value. [4] Cost normally falls into the domain of managerial accounting and has four essential purposes.

1. It is used for planning for future activities or budgets.
2. It is used for decision making throughout an organization.
3. It is used to compare actual results with budgets and determine why there are variances.
4. It is used to calculate income from the company's operations and projects.

The nature and form of cost can vary across organizations. In the Slovakia, there are three basic types of organizations: manufacturing, retail, and service. Manufacturing once is the greatest portion of the Slovak. Economy.

2 COST CLASSIFICATIONS

Costs are classified according to the purpose of the cost information that is sought (see Tab. 1).

Tab. 1 Cost clasification in project management, source: [4]

Purpose of the clasification	**Types of the cost**
Financial Statements	• Product Cost • Period Cost
Cost Behavior	• Variable • Fixed • Semi-variable
Assigning Costs	• Direct • Indirect
Cost Decisions	• Differential Costs • Sunk Costs • Opportunity Costs
Cost of Quality	• Prevention • Correction • Warranty

Product and period costs provide information needed to create external financial statements, such as the income statement and balance sheet. Cost behavior helps a company look into the future by seeing how costs may change based on other changing variables, such as demand or production rate, or how a fixed cost affects different situations. Costs must also be assigned to a source, giving rise to the concept of direct and indirect costs. At other times, cost information supports business decisions, such as understanding the differential between costs of two possibilities or the cost of pursuing one opportunity over another. Finally, cost of quality compares the cost of preventing defects as opposed to correcting defects and the cost of providing a warranty on products or services.

2.1 Product and Period Cost

Period and product costs provide information to create financial statements for external use. In order to better explain these costs, we need to return briefly to some basic concepts of cost accounting. As you will recall from Chapter 2, the matching principle of accrual accounting holds that cost is recognized at the time when the benefit that the cost provides occurs. For example, if a company pays for liability insurance for two years in advance, the cost of insuring the company for this year only will be reflected or accrued to this year's income and expense statement. In other words, the company derives only part of the benefit of the insurance premium this year, so it can claim only that part of the premium as an expense this year.

However, the cost to acquire or make a product to sell or provide a service is recognized when the sale of the product or service triggers revenue.

PRODUCT COST is the sum of all costs that are directly linked to the production or acquisition of a product or service to be sold later. Product costs might include direct materials and direct labor for a product, programming time for a piece of software, or professional time for creating a new service—such as training—to be sold. The cost of marketing and selling that product or service is not included in the product cost because they can be very difficult to link directly to theproduct or service.

PERIOD COSTS are all costs that are not related directly to creating the product or service and may fall into several categories. For example, the cost of administration of a company or for marketing and sales cannot be directly linked to the production of an individual product. In addition, the cost of administration, such as human resources services, salaries, or insurance and rent cannot be linked directly to a product or service. These are period costs that are recognized as expenses when the benefit occurs. For some, the benefit is immediate; for others (such as the insurance example) the benefit is recognized later.

It is important for project managers to recognize the difference between when the cost is recognized for accounting purposes and when it actually occurs. Although the cost of programming time may be recognized only when the software is sold, the actual expense occurs during project execution. This means that cash flow out of the company occurs before the expense that causes the cash outflow is recognized and that outflow has a real effect on the company bank account.

2.2 Cost Behavior

Cost behavior is valuable in predicting future cost when creating budgets or planning for future activities such as production or projects. Certain activities affect cost in different ways. In the manufacturing example discussed earlier, we discovered that the fixed setup cost and variable machine time cost of making prototypes could yield costs that were quite different from what was originally expected.

There are three major types of cost behavior: (1) variable, (2) fixed, and (3) semi-variable. However, often there are more subtle nuances to how each cost behavior will react in a given situation.

VARIABLE COSTS are those that change in direct relationship to changes in the activity that triggers the cost. For example, the cost of the material needed to manufacture a bolt increases in direc proportion to the number of bolts that are manufactured. A grocery retailer will incur increased cost as more containers of milk are sold. A consulting company will incur increased cost for each hour of service provided by hourly consultants. In essence, a variable cost is a fixed amount of cost per unit produced or activity used. As the units produced or activities increase, the cost increases by the same proportion. If more bolts are produced, the cost will increase by the same amount for each bolt. If more milk is sold, the cost will increase by the same amount for each container; and if more consulting hours are delivered, the cost increases by the same amount for each hour of service. There are other costs that, although variable, can be obtained only in large quantities.

FIXED COSTS In contrast to variable costs, fixed costs remain the same despite increases or decreases in business activity. For example, a manufacturing plant must heat the plant during the winter whether production increases or decreases. The grocery retailer that rents its building must pay the rent no matter how many containers of milk are sold, and the service company must pay the rent for its offices, whether billable hours increase or decrease.

In addition, fixed costs may or may not be controllable. It is up to management to decide whether to use those resources and incur the cost. If incurred, the cost would be fixed. Committed fixed costs cannot be controlled. The example of heat in the plant manufacturing bolts is non-discretionary. A service company may subcontract consultants for a fixed fee per month, but a cancellation clause in the contract would be an example of non-committed or discretionary fixed cost.

SEMI-VARIABLE COSTS contain both fixed and variable elements. The real key is in being able to identify each element of semi-variable costs. In the new product development project example, the project budget predicts that the overall cost of producing a prototype is 3,000 €. However, we discovered that the cost could be broken down into three major components: materials, direct labor, and machine costs.

2.3 Assigning Costs

DIRECT COSTS - Based on our initial definition of cost, a direct cost is the measure of resources that must be given in order to obtain an object or complete an activity that can be directly related to that object or activity. In a manufacturing setting, direct materials and labor would be direct costs. In a retail industry, the cost of acquiring goods for sale would be a direct cost. In a service industry, the cost of paying the employee to do consulting is a direct cost.

INDIRECT COSTS - Indirect costs are those costs that are not related directly to the object or activity that produce a project or service. Referring to previous examples, the cost of heating a factory is an indirect cost, as are the salaries of administrators not directly working on the production of goods or services.

2.4 Cost Decisions

Project managers are often called on to make decisions between different opportunities or different ways of accomplishing the goals and objectives of a company. The three types of cost that are used to make decisions are differential cost, sunk cost, and opportunity cost.

DIFFERENTIAL COST is simply the difference in cost between choosing one of two or more options to pursue. The other side of differential cost is differential revenue. When considering the different options to pursue, the differential cost and revenue of each option is reviewed, and the option that presents the higher income usually is chosen.

SUNK COST is any cost that is already incurred or sunk into a project. At times, when making decisions, managers may not wish to throw away money that has already been spent and will decide to continue so as to recoup the money already spent. This happens frequently in projects that are not going well.

Therefore, spending more money when the success of the project is not clear (or when failure is all too clear) is not justified. In reality, since the money is already spent, it cannot be used to make future decisions. Sunk costs should never have a place in deciding future activities or operations.

OPPORTUNITY COSTS results when a decision is made to pursue one benefit over another. Although opportunity cost is important in making decisions, it is not a cost that enters into accounting statements, such as income expense reports or balance sheets. Some examples of opportunity cost could be:

- The selection of one project over another. Since both projects represent potential revenue to the company, the revenue of the project not chosen is an opportunity cost.
- Not pursuing a particular new product in order to invest in other areas. The potential revenue of this product is an opportunity cost.

As we can see in each of the decision costs descriptions, often the information used to make a decision comes from the same source and is in a similar format as other costs, but is used for a different purpose. For example, in the differential cost example the production cost of the software could include variable, semi-variable, and fixed cost, but in order to make a decision about whether to subcontract, the type of cost was less important than the difference in cost between the two options.

2.5 Cost of Quality

An old adage about quality goes, ‘‘You can’t inspect in quality.’’ In other words, no matter how much you inspect a product or a service, if you are not putting quality into the work being done, you can’t inspect it in after the fact. You will wind up spending a lot of Money either correcting the problem immediately or correcting it later. The longer you wait to correct, the more expensive the correction. We define quality as fitness for use according to the original design of the product or service.

The first criterion of quality is whether the product or service is what it is supposed to be. During quality planning, you must take up the answer to this question and decide how you would know if the end deliverable is what it is supposed to be. On a technical project, this might involve a comparison with the detailed specification of a product or software. On a non-technical project—for example, a project to reengineer a business process, this would be a comparison with the proposed workflow of the new process.

The three costs associated with quality are prevention costs, correction costs, and warranty costs. As indicated, quality costs are a balance

between preventing mistakes and discovering and correcting them.

PREVENTION - The best place to ensure quality in a product or service is at the time that the product or service is created. The cost of prevention includes all of the activities that take place to ensure that the product or service can meet the standard established by the two questions, what is it and what does it do. In the case of a new product, this may be engineering tests; for a service, it may be a pilot test. When planning for the execution of a project, be sure that the cost of preventing mistakes and ensuring quality does not become more expensive than the price the product or service can bear in a competitive marketplace or more than can be charged for the product or service.

CORRECTION - The cost of correction includes all of the activities that take place to find and correct problems. Correcting problems can be a costly enterprise.

WARRANTY - The cost of warranty includes all of those activities that correct problems that occur after the product or service has been sold. Normally, this is the most expensive quality cost. It can involve return, repair, or replacement of merchandise and rework of services. Although warranty expenses may seem obvious in the manufacturing and retail industries, poor programming and the resulting debugging often can take a great deal of time and be very expensive.

3 COST AND INDUSTRY

Now let's take a look at how cost affects the finances of companies in the different industry categories: service, merchandising, and manufacturing.

The manufacturing industry presents a more complex picture of cost. Most of that complexity is due to the introduction of the other subset of cost of goods: cost of manufacturing. Cost of manufacturing has a number of components that contribute to the final cost of an individual product:

- **Direct Material Cost.** The cost of purchasing the materials that are transformed into the final product.
- **Direct Labor Cost.** The cost of the people that perform the manufacturing process.
- **Work in Progress** (WIP). The cost of partially completed products at the end of an accounting period. Warren Manufacturing had a certain amount of unfinished goods in the pipeline at the end of 2010.
- **Indirect Cost of Manufacturing**. The overhead cost of manufacturing that can be directly attributed to the manufacturing process; for example, the maintenance cost of a machine that is used in the process can be attributed to the products that are manufactured with it.
- **Finished Goods Cost.** The total cost of producing units of the product.

The key to understanding cost and the manufacturing process is in the state of the material that is being transformed. During the manufacturing process, materials are transformed by labor to become finished goods. Often a product goes through more than one stage during the process. Work in process is any intermediary state between direct material and finished good.

All of the costs associated with the manufacturing process are product costs, which must be tracked in order to calculate the final cost of the product. Inventory keeps track of product costs before the product is sold. A good part of managerial accounting is given over to tracking costs through the intermediary stages of manufacturing, each of which has an inventory, until the finished goods are sold and the revenues and expenses are accounted for.

If we return to the income and expense statement for Warren Manufacturing, we see that the company has a finished goods inventory but has no figure in purchasing. Warren's inventory is made up of goods that have been manufactured by the company. [4]

CONCLUSION

As we have seen, cost is a complex subject that reaches far beyond the individual budget of any given project. Different areas of the company use cost information in different ways, and the information must be formulated to suit the company area that it serves.

When project managers are planning a project, and in particular are creating a project budget, knowledge of the different kinds of costs that the project will incur is essential to successful budgeting. In addition, an understanding of overall cost at a particular company in a specific industry will help project managers create budgets that take cost into proper consideration and deliver winning results.

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