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# PROJECT MANAGEMENT ACCOUNTING

Budgeting, Tracking, and Reporting  
Costs and Profitability

SECOND EDITION

KEVIN R. CALLAHAN  
GARY S. STETZ • LYNNE M. BROOKS

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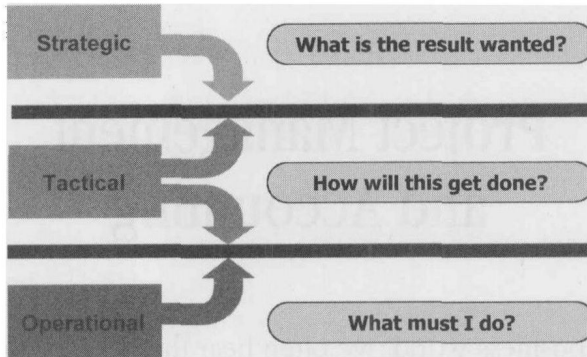
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## Project Management and Accounting

In today's business world, we often hear the terms "strategic alignment" and "mission and objectives." Usually these terms are used in phrases such as: "We must ensure that our business units are strategically aligned with our mission and objectives." In many companies, large and small, it often seems that one area of a company does not know what is happening in other areas; in some cases, one area may even be working against other areas within the same company. Quite often there is a large gap between what the top levels of the organization are saying and what is happening at an operations level within the company.

In our last book, *The Essentials of Strategic Project Management*, we spoke about the STO model.<sup>1</sup> STO stands for strategic, tactical, and operational. These three levels of operation inherently have typical communication problems that many companies need to deal with (see Exhibit 1.1). Each level of the model represents a different level of a company. Strategic is the executive level, where decisions are made about the purpose and direction of the organization. Tactical is the management level of a company, where decisions are made as to how to carry out strategy. Operational is the lowest level of the company, and represents where people actually execute the work.

**EXHIBIT 1.1 Strategic, Tactical, and Operational Model****The STO Model****Mission, Objectives, Strategy**

In order to have a clearer understanding of what Mission, Objectives, and Strategy mean, we need to look at some definitions and examples. Mission, first of all, is a statement of the purpose for the company's existence. An example of a simple mission statement could be General Electric's: "We bring good things to life." It is simple and easy to understand. Honeywell's mission statement is quite eloquent in its simplicity: "We are building a world that's safer and more secure, more comfortable and energy efficient, more innovative and productive."

In each case, the company's reason for existence is stated clearly and simply, giving direction to all that the company does. The reality is, however, that carrying out that mission is usually much more complex than a simple statement. Problems arise when management is not able to turn a mission statement into action and employees do not understand how their work carries that statement forward. That situation is where mission is often confused with strategy.

Strategy consists of a series of concrete actions that a company performs in order to carry out the mission. Each concrete action is



an Objective. The actions must support the mission of the company but must also adhere to good business principles. One of the fundamental responsibilities of a company is to create a return for its owners, whether they are a small group of investors or a large group of stockholders. There is always the responsibility to do this in an ethical manner, so that carrying out the mission and creating value are dual fundamental principles of any business. Even a not-for-profit company must create value; without the money, there is no mission.

An example of a Strategy that might correspond to Honeywell's Mission Statement might be to create a new line of home heating furnaces that are highly efficient and cut down on the amount of heating oil that is used to maintain the home's temperature. An Objective for that Strategy would be to carry out research into new technology for heating oil burners that are more efficient.

Problems arise in many companies when the mission is not understood at all levels, which brings us back to the STO model. When communication does not exist between the different levels of a company, mission cannot be translated into strategy and cannot be carried out by employees. Often the walls between levels exist, as illustrated in the STO model, not because of purposeful action or a desire to harm the company, but simply because no one at the firm has tried to bridge the gap or because someone has tried and failed.

As mentioned in the preface, senior project managers have their roots in many different areas of expertise, but the great majority do not come out of finance or accounting. At the same time, in order to advance within an organization, project managers need to acquire knowledge beyond their areas of expertise. The first step toward advancement is to become proficient in project management knowledge and skills in order to have the flexibility to move beyond those areas of expertise.

After becoming a proficient project manager, continued experience in project management helps project managers attain senior

status. After years of managing larger and more complex projects, senior project managers often aspire to making greater contributions to their organizations. One way to do this is by gaining expertise in finance and accounting, thereby enabling them to view the organization from a different perspective and to make a greater contribution to it.

In this chapter, we review the project management phases from the perspectives of various project management deliverables and processes with an eye to related finance and accounting issues. This review serves as an introduction to how finance and accounting is related to project management and can serve to help an organization perform projects in a manner that supports sound financial and accounting management. As we review each project management phase, we discuss the questions for finance and accounting implied in that phase and indicate which chapter in this book contains pertinent information.

## Information Collection

Information collection is a crucial element in project management, finance, and accounting. Collecting the correct information is crucial for project success. We conduct our review of the project management phases according to the project management documents that are created during each phase of a project:

- Initiation: Project charter
- Planning: Work breakdown structure, project schedule, project budget and cash flow, resource plan, procurement plan, quality plan, risk response plan

If the project is for an external client, there may be a request for proposal and corresponding proposal and a contract or some other agreement for services.

- Project Execution and Control: Status reports and dashboards.

In the remainder of this section, we look to each of these documents for information that is important to understanding the financial health of the project.

## **Project Initiation**

The project charter contains high-level information about the project, including deliverables, stakeholders, and, in particular, the definition of success for the project. That definition ought to include a description of the financial success of the project and how it will be measured. This definition provides the guidelines by which project performance may be judged.

During initiation, the first questions concerning finance and accounting are broached. For example, does the project align with the organization's strategy, in particular the financial strategy? Does the project deliver a product or service that is compatible with the goals and objectives of the organization? Will the project create value that is within the required return that the organization's financial strategy and owners or shareholders require? Often project sponsors ask what a project's return on investment (ROI) will be. In fact, project managers can increase their contribution to the organization not only by understanding a project's ROI but also by understanding in detail how that return will be delivered, over what period of time, and at what cost to the organization.

For example, let's say that a project will have a 10 percent ROI. However, if that return is over a 10-year span at 1 percent annually, it probably would not be considered as valuable as a project that will return 10 percent annually for 10 years. But even a 10 percent return over 10 years would not be very interesting if the organization's cost of capital is 15 percent. In addition, if the project is considered very risky, then the organization may require a 20 percent annual return.

Financial levers—ways in which the finances of a company can be adjusted—are explained in Chapter 2. There are additional illustrations

in Chapter 3. The case study in Chapter 7 gives specific examples of how portfolio management can require criteria based on the financial strategy of the organization.

## **Project Planning**

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### **Work Breakdown Structure and Project Schedule**

The Work Breakdown Structure (WBS) contains a description of each deliverable that makes up the final project deliverable along with the tasks that must be performed in order to create each deliverable. Each task also has a description that defines the inputs, outputs, materials, and resources required to complete the task. The task description also defines how long each resource must work to complete the task as well as how much of each material is required.

The project schedule arranges each task in its proper order of execution and indicates the order in which the tasks must be done. The project schedule also defines task dependencies, that is, which tasks must be completed before other tasks may begin. Based on these calculations, project managers know when tasks must be carried out and what the end date for the project is, as well as what its critical path will be.

Understanding how much work must be performed is crucial to creating the project budget. During execution, one of the elements of project control is collecting information about how each task is executed. If managers do not have an accurate measurement of the expenditure of resources and materials, then they cannot determine the actual cost of a project or understand how the project is performing financially.

From the task description, project managers know the amount of effort that is required to complete the task. They also know when the task is supposed to be completed. Two basic questions yield information that is needed to get to the true state of the project:

1. How many hours (or days, if the effort is described in those terms) have the resources been working on the task?
2. How many hours (days) remain to complete the task?

The answers to these questions yield valuable information. By totaling the two answers, it is easy to find out if the task is taking more effort than expected and to come up with a prognosis on whether the task will be completed on time. Multiplying both the number of hours worked and the hours remaining to be worked by the hourly rate for each resource reveals not only the cost of the resources to that task, but also how much additional cost will be needed to complete the task. Later in this chapter we cover the concept of earned value, which explains how to work with and interpret this information.

Another concern that project managers monitor by reviewing effort on tasks and the state of deliverables is “gold plating.” Gold plating is adding more to a deliverable than is required by the project specification. It is often a problem on client projects, where resources, with good intentions, seek to add value by doing more than required. It is also a major source of effort overruns on many projects. The problem also may be scope creep, where a project stakeholder has requested that additions be made without getting proper authorization.

## **Project Cost**

Chapter 4 covers the notion of cost as it affects a project. It is important to understand the difference between cost and expense. The notion of cost deals with what must be given in exchange for the value that the project creates. For example, the hourly rate or salary of resources employed is a cost to the project. The way that resource cost accumulates will have an effect on the value created. For example, a contractor charging an hourly rate to a project will affect cost differently than a salaried employee.

Expense deals with the accumulation of charges that make up the project budget. In addition to salaries and hourly payments to resources, materials, overhead utilities, and other resources may make up the budget. Chapter 7 covers how to develop and monitor the project budget as well as how to develop and monitor a project cash flow diagram. The cash flow diagram illustrates the timing of cash outflows and inflows as described in the project budget.

## **Resource and Procurement**

The resource plan and procurement plan contain estimates on resources, including the skill sets needed, as well as a list of the actual resources and materials needed to complete the project. The resource plan also describes which internal resources are available and what resources will be needed from outside the organization. It also contains information about the source of resources and an estimate of the cost. This information is important in developing the project budget.

The procurement plan is very similar to the resource plan, except that it covers other materials that are needed for the project, along with estimated costs. The procurement plan addresses timing and delivery and indicates whether there are any special situations, such as volume discounts. In a manufacturing or construction environment, the procurement plan is of great importance; it is much less important in some service industries.

During project execution, project managers must monitor the actual use of resources against the resource plan. Resources reporting on actual time spent on project tasks and estimates for task completion provide the basic information of resource cost. However, project managers must also compare the actual results against the resource plan to ensure that the resources being used match what is in the plan.

For example, a shortage of internal resources could necessitate the use of external resources that are more expensive and add to

project costs. Variances in actual project performance, including scope changes, could also have an effect on resource cost; for example, tasks may have been underestimated or for some other reason may be taking longer to complete or requiring more resources. Additional resource needs can also be a problem that is not related to finances. Increased overtime for salaried employees can have an effect on other work within the organization or on general morale. Close monitoring of the resource plan against actual results helps project managers maintain the financial health of the project.

Project managers also monitor the project procurement plan, both for cost to the project and for any changes in the business environment that could affect the availability or cost of any materials required for the project. As this chapter is being written, the cost of gasoline and other fuels has become quite volatile, which would have a negative effect on any project requiring the use of heavy machinery or other equipment. If no pricing guarantees are negotiated ahead of time, or if quantities needed are greater than first estimated, there could be significant cost overruns on the project, threatening its profitability.

Chapter 4 covers information about cost, and Chapter 7 illustrates the effects of resources and procurement on project finance and accounting.

## **Quality**

The quality plan needs to be considered in conjunction with the WBS. Asking questions about the intended deliverable in comparison with what the tasks are actually delivering provides additional information about how the project is progressing. Project Managers need to ask, "What is the deliverable and what does it do (or what is it intended for)?" The answers to these questions are the start of quality management.

In Chapter 4, we discuss the cost of quality, including prevention, correction, and warranty. During project execution and control,

project managers monitor the cost of quality by ensuring that any work related to quality prevention is completed and by determining whether any correction work is necessary.

If preventive work is not performed, the overall cost of a deliverable may be lowered; if that results in increased correction costs, the project may fall short of financial goals. Project managers must monitor whether prevention costs are in line with budget, and if not, why. The need for more corrective work than anticipated could have a negative impact on project financials immediately or in the future, if warranty costs (the most expensive) are incurred.

## Risk

There are several ways to look at risk. From a project management point of view, risk is quantified and dealt with through a risk response plan, seen below. From an accounting or audit view, Chapter 8 presents a comprehensive overview of dealing with risk. The risk response plan answers these questions:

- What risks threaten the project?
- What is the likelihood that a risk will occur?
- If the risk occurs, how serious will it be?
- What can be done to mitigate the occurrence of the risk?
- What is the plan if the risk does occur? What is the backup plan?

Many methods are used to calculate the effect of project risk, some quite sophisticated in their analysis and requiring detailed information. Whatever method is used, the outcome is usually quantified as a project cost. In other words, what will it cost to mitigate for risk, and what are the potential costs if risk occurs? The potential costs are often expressed as contingencies and the amount of resource time or money that is budgeted for use if risk occurs.

Project managers monitor risk in much the same way that they monitor quality. They must ensure that mitigation activities occur as



planned, and thus increase cost. Project managers must also monitor for signs that risk may happen, in order to be ready to implement the risk-response plan. A timely response to risk and the judicious use of contingency often can make or break a project financially. Chapter 7 contains pertinent information for risk management as part of budget development. Chapter 8 takes on Risk Assessment from a different point of view, that of an accounting professional, providing an additional body of information to the project manager.

## **Project Execution and Control**

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*A Guide to the Project Management Body of Knowledge*<sup>2</sup> defines project execution as coordinating people and other resources to carry out the (project) plan. This definition is deceptively simple; under the direction of the project manager, the project team, vendors, and others carry out the tasks that are defined in the project plan in order to produce the project deliverables.

However, project managers must not only ensure that work is progressing as planned, but also must monitor all aspects of project execution, in particular the financial results. This is project control, which ensures that project objectives are met by monitoring and measuring progress regularly to identify variances so that corrective actions may be taken.

Project Management is not unlike flying an airplane. Flying conditions are perfect as the plane heads toward its destination. However, even on a clear day, wind currents in the air can push the airplane off course. As the pilot monitors the gauges, she will notice if this is occurring and will compensate by steering the plane back in the other direction, toward the intended destination.

The project manager is the pilot, always monitoring the gauges and ready to steer the project back on course. There is more to flying the airplane than just steering it. The pilot is always monitoring the systems, making sure that there is enough fuel to reach the