

Chapter 6

Developing the Information Technology Project Plan

Successful projects, those that have been completed on time and budget and have satisfied the customer's requirements, are the projects that are carefully and well planned. In fact, if you examine successful projects closely, you will notice that they have two things in common. First, a lot of time is spent on the planning and development process, sometimes longer than it takes to complete the rest of the project. Second, approximately half the project budget will be expended before the implementation phase starts. Putting so much effort into the planning phase, or stated another way, waiting so long to get into the doing activities, is simply anathema to our culture. We want to get in there and code like hell. Nevertheless, it is important to remember that the success of a project starts with the project plan.

The project plan, like any plan, is only as good as the thought and care given to its development. One thing that has to be understood from the beginning is that the plan is dynamic—planning must evolve with the project. The more common practice is to develop a plan, put it on the shelf, and never look at it again until the project is finished. To successfully complete an IT

project, the initial project plan needs to be as thorough and detailed as possible. The trick is to update and change the plan as more is known about the project, the evolving technical approach, the risks, and the customer's view about what the final product will look like. In many IT projects, the requirements themselves are evolutionary. That is, the customer does not have a clearly defined image of the final product, only a sense of the general functionality that is needed. With an evolving requirements definition process, the plan must also be flexible and evolving. Even if the project is very well defined from the beginning, which is difficult to do in today's fast-paced business and technology environment, there needs to be a refreshed plan for, at the very minimum, every one of the project's phases.

This chapter discusses how to develop the project plan and provides a project plan outline that can be used, with only moderate alteration, for virtually any IT project.

Before writing the project plan, a significant amount of work is required. These first steps are crucial. The considerations included in the plan will spell the difference between project success and failure.

Planning Considerations

At the very minimum a project plan must answer these three questions:

1. What is to be done?
2. When should it be done?
3. Who should do it?

The project plan generally starts taking shape as soon as a project manager is assigned to the project. The project manager will have some idea of what is required from the scope statement, contract documents if it is an external project, or any information

gleaned from those who selected the project or directed that it be done. If the project manager was fortunate enough to have been included in the embryonic stage of the project, then she is way ahead of the learning curve. Otherwise, she must resort to other means to determine what the project is all about.

Determining What to Do

We explored this subject in some detail in the last chapter, but it is beneficial to review the process.

Determining what to do is simple in concept, but not always easy to accomplish. The difficulty of determining project requirements is directly linked to how detailed and well written the customer's needs are stated. That seems simple enough, but the fact is, more than half of all projects start out with poorly stated or poorly conceived project requirements. So the project manager must first determine what is to be done. He must ask this question: Why are we doing this project?

If the SOW, contract documents, or other written documentation define the project requirements, then determining what is to be done is generally a matter of restating the requirements in a work breakdown structure format and assigning tasks and responsibilities. If the project is internal to the organization, or the customer is not sure what he wants, then the project manager has to determine the requirements. Determining the requirements under these circumstances is done by asking a lot of questions—questions of those who selected or generated the project and questions of those who are for and against the project. Remember that it is just as important, if not more so, to know who is against the project, and why, as it is to know who is for the project. This is because the relative strength of these stakeholders in the organization can shape the final requirements. Without knowing the individual stakeholders' agenda, the project manager quickly finds himself pursuing requirements that are being subtly changed by a powerful functional manager.

Determining when the project's deliverables are due drives the number of resources required and vice versa. My personal approach is to first determine when the customer needs the product and then to determine how many and what type of resource skills it will take to complete the job. What I discover from this exercise determines whether I need to acquire more resources, either internally or externally, or whether I need to renegotiate with the customer. In short, the schedule, numbers or resources, and budget are so interrelated that they generally have to be analyzed and developed together. But the first step is to determine when the project's deliverables are due.

Determining When It Should Be Done

The schedule is driven by first to market considerations, the customer's operational needs, or maintaining or creating market share. No matter the reason, the project manager's job is to determine how the schedule can be met.

Almost every project has a dictated schedule, and it is almost always an unreasonable one. Customers do not want to hear that the schedule is unreasonable; they want to know how you are going to meet it. If this sounds far-fetched or even crazy, you may be right on both counts. The reality is that schedules are set for, at least in the customers' minds, very good and plausible reasons, and it is the responsibility of the providing organization to meet schedules. Therein lies a major communications gap between the provider and the customer, and it is one that usually results in project failure or at least less than satisfactory project success. The sad reality is that there is little that can be done to correct the problem. So what is the project manager to do?

Determining the schedule is straightforward. First, the project documentation will very likely contain a "deliver by no later than" date, that is, a delivery milestone. If so, the schedule is fixed. The task then is to determine whether the date can be met. Usually, the schedule, even an unreasonable one, can be met given

enough resources. The problem, of course, is that there may not be enough resources in the company, which requires hiring or contracting for additional skills. Even when there are enough resources, there is a break-even point beyond which it becomes cost-prohibitive.

If the customer does not dictate the schedule—an unusual occurrence, but it happens occasionally—then the project manager and her team can develop a schedule based upon the numbers and skill sets needed. Actually, this is a best-case scenario, and one that the project manager should lobby for because the resulting schedule is reasonable and likely to be met.

The usual scenario for determining the schedule is that the requirements are determined, a WBS is developed, and a network, usually a precedence diagram, is drawn to show the task dependencies. From the network analysis, a good estimate of the schedule can be determined. It is important to remember that when determining task durations for the network analysis, the number and skill sets available for the task have to be considered. Otherwise, the estimate will be inaccurate, and the schedule will not be achievable. Once the network is drawn and analyzed, it is a simple matter to determine the shortest duration for completing the project and whether it is possible to accomplish the project in the time allowed by the customer. If not, then the project manager and his organization can make the decision about how to shorten the schedule—usually this involves who is needed for the project, which is the next important planning consideration.

Determining Who Should Do It

During teaching or speaking opportunities, I often ask whether anyone belongs to an organization that assigns team members to the project as opposed to having the project manager determine who is needed and then negotiating for them. Usually there are a few people who have their resources assigned, so the practice is not uncommon. But more commonly, it is left to the project

manager to analyze the need, determine the skill sets required, and then to negotiate for the resources.

Logically, one would expect determining the team makeup to be a relatively straightforward, if not simple, task. The project manager probably knows everyone in the organization and probably has worked with most, if not all, of them. With relatively small or not too complex projects and in smaller organizations, the task of determining skill sets and available resources is actually not too difficult. It is with complex projects, requiring widely different skill sets and cutting across several functional lines, that the task becomes enormous.

The best approach for determining required resources is to elicit the help of what I call an initial team. This team is composed of other experienced project or functional managers and other senior personnel. I call it an initial team because these people will not function as team members once the project gets under way—they are too senior to work as project team members. The function of this initial team is to help the project manager analyze and define the project requirements and to determine the skill sets needed. Once the skill sets are known, the resources can be identified, and this initial team will be able to recommend specific people to serve on the project team.

When negotiating for resources, it is very important to remember that one should ask for a specific person. If the functional manager from whom the resource is requested is not presented with the name of a specific individual, then she will likely provide the first available person, regardless of whether he has the requisite skills and experience. Asking specifically for someone may not yield the desired result, that is, the individual may not be available because he is committed to other projects, but it alerts the functional manager to the specific level of skill and experience needed for the project. From a negotiating perspective, this approach puts the onus on the manager to provide someone of equal or better qualifications.

After the resources are identified and their use on the project guaranteed, the project plan can be more fully developed.

The IT Project Plan

It is surprising how many organizations begin projects without having spent time planning for them. There is the code like hell syndrome, which is to begin coding before a plan is in place. This syndrome is based on the belief that all things can be fixed with software. Furthermore, those who practice this syndrome believe there is no time waste. Another often heard question is: Why spend the time planning when technology changes so rapidly anyway?

In a well-planned project, the cost of analyzing requirements, building a project team, planning the project work, designing and optimizing the deliverables, and hiring vendors or teammates can easily consume 50 percent of the project budget before the project is ever implemented. Without a plan, preparing and controlling this expenditure is not possible.

Project planning is necessary and important. If it is done correctly and the organization supports it, approximately 50 percent of the project's budget is used up by the time the project itself is implemented. That means that half the budget is spent on analyzing the requirements, building the project team, planning the work, and designing the deliverables. Without a plan, none of this is possible.

Plans vary from industry to industry and from organization to organization. However, all project plans have basic components. The next section describes a generic project plan that can be tailored to any industry.

The IT Project Plan Format

Exhibit 6-1 illustrates a generic project plan format. This format has been developed over many years by practicing project manager in various industries. The plan's components are discussed below so that you understand what is typically provided in each

- I. Executive Summary
- II. Project Description
 - a. General description of the project
 - b. Project objectives
 - c. Project fit with strategic goals
- III. Technical Approach
- IV. Contractual Requirements
- V. Resource Requirements
 - a. Equipment
 - b. Materials
 - c. People
- VI. Schedules
 - a. Master schedule
 - b. Detailed phase schedules
 - c. Milestone chart
 - d. Deliverable schedule
 - e. Meetings or other customer-required schedules
- VII. Cost Estimates and Budget
- VIII. Potential Risks
- IX. Evaluation Criteria
- X. Appendixes
 - a. Systems engineering management plan
 - b. Risk plan
 - c. Communication plan
 - d. Logistics or other special-purpose plans

Exhibit 6-1. A generic project plan format.

section and so that you can easily adapt the sections to your own organization and project.

Executive Summary

The executive summary is written last because it is meant to be a short description of the project and it is intended for senior man-

agers. The idea is to provide a description of the project that key stakeholders can quickly read and digest without burdening them with technical details—a synopsis of the reasons for the project and its major characteristics and functional capabilities. If a stakeholder needs more information, she can get it from the remainder of the project plan.

The executive summary should be viewed as exactly that—a summary. It usually is relatively short, about two pages, but can be longer, depending on the size and complexity of the project. It should be written as succinctly as possible so that readers can quickly read and digest it but still be able to talk about the project with some authority.

Project Description

This section provides a narrative description of how the project manager and team will accomplish the project's goals. It should describe both the management and the technical approaches to accomplishing the project. Precise details of how to manufacture a part or of the steps in developing some software are not required, but the general processes of each step of the project should be described.

This section should also discuss the relationship of the project's technical approach to existing technologies. If it is anticipated that new and different technologies will be required, this section should discuss how they would be integrated into the project.

This section also describes the requirements of the project, the objectives, the scope (how large the project is), the time line, the type and number of end products, what the measure of success will be, and how the project goals mesh with the organization's goals. This section is usually very detailed and can be several pages long.

Technical Approach

This section is an opportunity for the project manager and project team to explain what processes are required to achieve the goals of the project. Both the management and technical processes should be outlined here. It is not necessary to describe the exact manufacturing steps of building a piece of equipment, but the general processes of each step of the project should be described.

This section should also discuss the relationship of the project's technical approach to existing technologies. If it is anticipated that new and different technologies are required, then this section will discuss how these new technologies will be integrated into the project. Remember that rapidly changing technologies are a burden and one of the primary risks in attempting an IT project. Therefore, it is to the project manager's benefit to have a plan for dealing with these changes before they occur. Not only is it wise to be ready to cope with such changes, but your project stakeholders will certainly feel more comfortable with your leadership.

Contractual Requirements

Often this section will not apply to your project, but occasionally a project comes about because of an external contract. In this case, there are some specific and far-reaching contractual clauses that must be considered before the project progresses too far. For example, it is common in the public sector to let a contract for a needs analysis. In such cases, the buyer, in this case a government agency, always stipulates that the contractor performing the work will not be allowed to bid on any resulting follow-on contracts. This type of special contractual requirement needs to be in the project plan because all stakeholders need to be reminded, in writing, that this project will end the organization's participation in the work that follows.

Other contractual requirements that should be mentioned in this section include customer-mandated milestones or special

reporting requirements—anything that the project manager feels should be brought to the attention of key stakeholders.

Resource Requirements

Resources include anything needed to accomplish the project's goals. The resource of greatest concern is people to work the project. That is because projects usually start with inadequate numbers of people or with individuals who possess less than acceptable skills. Some resources, such as materials or equipment, are easy to acquire—but acquiring the right people for the job is not so easy. Other major resource requirements include special equipment, such as computers, special test equipment, or desks and office space, and any kind of materials, that is, hardware, special connectors, or cabling.

It is important to break out these costs for several reasons. First, it is easier for the project manager to negotiate for resources if he can enumerate them precisely. Second, it really is the only way to identify the exact project costs. Third, having a detailed accounting of costs enables the project manager and team to determine where cost cuts can be made without jeopardizing the project.

Schedules

The schedule section of the project plan quickly becomes unwieldy. My personal preference is to give a brief overview of the schedule requirements, perhaps a milestone chart as well, and then attach the schedules as an appendix. This approach serves two purposes: First, it eliminates the necessity of having foldouts to accommodate the size that schedules generally require, and second, appendixes are easy to detach and use as a separate document. Initially, of course, the appendixes need to be a part of the plan for approval purposes and so that the whole plan approach

is understandable. But considering that there can be a number of schedules (master, task, milestone, meetings, and so on), summarizing them in this section and attaching them as appendixes makes a lot of sense.

One thing that many new project managers don't understand, or are surprised by, is the number of meetings that a customer can require. For example, I once had a government customer who required that we schedule a meeting every two weeks for the duration of the project, which was three years long. The project plan contained only one schedule of meetings.

One other important type of scheduling tool that is often overlooked for this section is the network analysis. A network analysis, either a PERT or precedence diagramming analysis, is required to determine the critical path and other risk areas. The schedule section is the place to show this analysis.

Financials

The WBS is the key project management tool. With it, the project requirements are completely captured along with the tasks needed to accomplish the work of producing the deliverables. With the project tasks identified, the schedules are developed with a PERT or precedence diagram. So the WBS must be developed first, then the schedule.

After the schedule is set and the number of resources are determined, the cost estimates can be developed. Some project management specialists determine the schedule before resources are considered; others determine the available resources, then develop the schedules around them. The fact is, these two approaches to planning have to be worked together. That is, one cannot determine the schedule without having determined the resources. Likewise, the schedule, particularly if the customer sets it, can drive the number of resources required. Hence, schedule and resource analyses must be done together and the appropriate trade-offs made to optimize both factors.

Usually, the project is approved and ready to begin before the project manager is even assigned. The best-case scenario is one that includes the project manager in the analysis and selection of the project. If, however, the project manager suddenly finds himself in charge of a project with no knowledge of its beginnings, it is indeed wise to verify the budget. The project manager should always determine whether the assigned budget is adequate to accomplish the project requirements. After all, if the project is a success, perhaps the project manager will get the credit. But if it is a failure, the project manager certainly will be held responsible. Developing a cost estimate to verify adequacy of the budget may not get the budget changed, but it will allow the project manager to document that the analysis was accomplished and the key stakeholders were notified. At the very least, the project manager and team will know whether they have to cut costs to meet the given budget.

Potential Risks

Analyzing project requirements is the first opportunity to identify potential risks. It is imperative that any potential risks are identified and documented in this section. Furthermore, a contingency plan to handle these risks is crucial. Generally, the type of risks that surface this early in the project revolve around resources and, often, schedule. For instance, a requirement needing the services of specialized skills not resident in the organization poses a significant risk to the project's success. Also, if the customer sets the schedule because of, say, some operational or marketing need, then this might increase the risk to the success of the project. These risks should be identified in this section. In the previous examples, a plan that provides a contingency contract with a vendor or consultant who has the requisite expertise and the addition of resources to reduce the time it takes to accomplish the work should be provided, respectively. However, remember that adding resources generally does not result in reducing the schedule in the

IT industry. In fact, adding resources often increases the time to finish a task or project because of the learning curve required to bring new resources up to speed. (This is not the case in other engineering or construction projects—adding resources usually reduces the schedule significantly.)

Clearly, the project team will not be able to identify all the project risks, but with experience, the use of the initial team, the WBS, the network diagram, and general lessons learned information, many of the likely risks can be identified. One very good way of capturing these potential risks in this section is with a matrix similar to Exhibit 6-2. This matrix identifies the risk, its level (high, medium, or low), a brief description of how the risk will be dealt with, and the risk level after the contingency plan is implemented.

The matrix usually will contain ten to twelve risks, the approximate number that a team can actively monitor and control at any one time. The real importance of such a matrix is to communicate to the major stakeholders and especially to the customer. This matrix clearly identifies the risk, the risk level, the strategy for mitigating the risk, and how the strategy will reduce the risk level when it is implemented.

Risk identification begins with requirements definitions and continues throughout the project's life cycle. The primary tools that will help the project team identify risks are the WBS, because identifying tasks to meet the requirements will reveal resource, schedule, quality, and technology shortcomings in the organization, and the network diagramming techniques, because networks reveal interrelationships.

Once these key sections of the plan have been developed, it is time to consider how you will know whether the project is progressing satisfactorily. The section on evaluation criteria tells you what you need to do to find out.

Evaluation Criteria

The importance of establishing evaluation criteria designed to measure how well the project is doing against the customer's re-

RISK/CONTINGENCY PLAN ANALYSIS

Requirement	Risk	Risk Level	Contingency Strategy	Risk Level After Strategy Implementation
Deliver fully functional prototype within six months of contract date,	Customer is not clear on functional needs.	High	Involve customer in prototype design and development.	Low
Integrate new version of XYZ operating system into communications package.	No expertise with XYZ OS; don't know extent of defects in new version.	Medium	Hire XYZ developing company to integrate new OS version into the communications package.	Low
Provide 1,500 stations per month for customer operations.	Manufacturing capability currently at 1,300 per month.	High	Add second shift to manufacturing line.	Low to medium
Test first system by July 15.		Medium	Test software code as it is written.	Low

Exhibit 6-2. Risk analysis and contingency strategy matrix.

quirements cannot be overstated. The customer may mandate some evaluation criteria in the form of product demonstrations, status reviews, or tests. Furthermore, standards established by the industry, regulatory agencies, or environmental groups define processes or procedures for the organization. But the project manager and her team also have to establish criteria against which to measure whether they are meeting the project requirements. These criteria may include milestones, sign-off points by the customer, or quality checks by the project manager or, more appropriately, by an independent person or group. One good way of evaluating the project is to have an independent team perform a technical and financial audit on the project at various points in the schedule. Project teams do not generally view audits very favorably because the very word implies looking for something wrong and, more to the point, attaching blame for whatever is uncovered. But audits are important tools in the business of managing projects. If they are thoughtfully introduced and intelligently used, that is, not for punishment but for improvement, they become a very powerful means of evaluating the project's work.

One other major section of the IT project plan is often overlooked, or at the very least, shortchanged. This section deals with ancillary and additional plans or other informational documents that are pertinent to the project and/or important to the project team and stakeholders. This section is the appendixes.

Appendixes

The appendixes are a very good place to collect additional required plans and such things as schedules. I always attach my schedules and network analyses as an appendix because, first, they tend to be bulky and are usually on foldouts and, second, schedules and network diagrams are the kinds of things that the project manager and her team need to constantly consult. As appendixes, they are easily detached for daily use. More important, the appen-

dixes are the place for other project-related plans, specifications, and engineering drawings.

Often, because of specialized needs, the customer will include specifications about the products needed. Let us say, for example, that the project is to develop and build a communication link to a remotely controlled drone for the military. In this case, the customer (the Department of Defense or the Central Intelligence Agency) would very likely include product specifications and perhaps even some engineering drawings of some of the components. If so, these documents would be attached to the project plan as appendixes.

Other appendix candidates are ancillary plans such as the risk plan, quality plan, the communication plan, and the systems engineering management plan. All these plans are important to the project team and have to be available for their use before the major work on the project begins. If the project has resulted from a contract outside the organization, particularly if the customer is from the federal sector, then these plans will have been required and will have to be approved by the customer. Even if the project is one internal to the organization, developing the plans before work on the project begins is crucial. This is because the project team usually doesn't have the time or the inclination to stop work and develop plans if they already are in the midst of completing their assigned project tasks.

The key to a successful project, or anything else for that matter, is a carefully thought-out plan. In the case of projects, it is absolutely imperative if the project has any hope of success. One problem all project managers have is getting the plan completed and in place before pressure from senior management requires that the project work, that is, actual designing, coding, and building, is begun. A phenomenon that plagues us all is the appearance that work is not being done unless we can actually *see* progress. Planning is a thinking and writing exercise and simply does not give the same appearance of movement that, say, writing code does. Thus, the project manager must find ways of convincing senior management that progress is being made even though the

progress is largely mental. Whether the project requirements are met within the customer's expectations depends on how well the plan is developed and, of course, implemented.

Mapping the WBS to the Project Plan

In March 2001, the General Accounting Office (GAO) issued a report that discussed the importance of matching needs, that is, requirements, to resources, that is, supplier capability to perform. The report specifically looks at the Department of Defense and its general practice of contracting for large weapon systems, but the results of the GAO study are applicable to any project, public or private sector, large or small, complex or simple.¹ The findings, when viewed practically or logically, probably are not surprising. Yet, the very problem that the findings focus on is the problem that invariably dooms many IT, and other, projects. Namely, the customer's requirements are not matched to the existing resources *before* starting the product development cycle.

In the rush to start coding, euphemistically speaking, the project is started without giving proper consideration to the available resources—human, capital, or technical. In short, planning is rushed, incomplete, or not done at all. Consequently, the project is not successful in the sense of performing as one would hope or expect.

The GAO found that a match between a developer's resources and a customer's expectations is eventually met on just about every project's product. But the key distinction between successful products—those that perform as expected and are developed within estimated resources—and problematic products are *when* this match is achieved. When a customer's needs and a developer's resources were matched before a product development started, the more likely the development was to meet cost and schedule objectives. When this match took place later, after the product development was under way, problems occurred that

took significantly higher investments—sometimes double—of time and money.

The study found three factors that were key to matching needs and resources before product development began. First, developers employed the technique of systems engineering to identify gaps between resources and customer needs before committing to a new product development. Second, customers and developers were flexible. Leeway existed to reduce or defer customer needs to future programs or to allow the developer to make an investment to increase knowledge about a technology or design feature before beginning product development. Third, the roles and responsibilities of the customer and the product developer were matched, with the product developer being able to determine or significantly influence product requirements. In cases where these factors were not present at program launch, product development began without a match between requirements and resources. Invariably, this imbalance favored meeting customer needs by adding resources, which resulted in increased costs and later deliverables.

Matching the customer's needs to the provider's resources would seem a logical thing to do. The fact is, though, many projects are begun with little thought and less planning. The only basis for the commitment in these cases is that the project seems doable and perhaps is similar to one that the organization has already done. Unfortunately for both the organization and the customer, even if the product is finally delivered with the functionality desired by the customer, it usually costs more and takes longer if the needs were not matched with the available resources before the product development began.

Validating the Schedule and Budget Estimates

Schedules and budgets are estimated for individual projects using the tools we discussed earlier—the WBS, network analysis, and

Gantt charts. But once these schedules and budgets are completed for each individual project, they have to be evaluated and validated in the context of the company's total program and portfolio activities, that is, each project is evaluated against all other projects across the company. Otherwise, there will be no sense of whether the company can manage all the projects with available resources or if the schedules can be met within the construct of resources allocated across multiple projects.

There should be at least two formal reviews for both the project's technical and cost approaches. The first review for the technical proposal (often called the blue team review) occurs fairly early in the process. The basic function of this review is to determine whether the customer's requirements are understood and the technical approach is viable. The second review, called the red team review, occurs near the end of the planning cycle and is a very thorough review of the proposed approach from the customer's perspective. This review addresses the customer's requirements, the technical approach, and, in short, whether all the requirements have been addressed. This review has to be accomplished late enough in the cycle that all the key elements of the plan are complete, but early enough to incorporate needed changes.

The first review for the cost detail is called the gold team review. This team looks at the approach, whether the costing team has considered all the customer requirements, and if the cost strategies are viable. The second review, the green team review, occurs approximately a week after the red team reviews the technical proposal. This timing is necessary in order to revise the costs if the red team uncovers omissions or other discrepancies in the technical approach.

Even when the costs have been reviewed and the green team agrees that the costs are comprehensive and accurate, the senior official responsible for the final cost document—or proposal, as the case may be—will want to review the costs, or at least the bottom line. The project manager and the costing person should be prepared to defend the cost figures and their rationale for

them. The project manager should also be prepared to make a recommendation relative to how much profit to apply. Since profit is the only rate that is flexible, a smaller profit or even no profit can be used to reduce the overall price if the effort is a competitive bid, for example. The decision about how much or how little profit to use resides with the company president or a designated representative. However, the project manager should have an estimate of what the customer is willing to pay and what it will take to win the job. Thus, the amount of profit that keeps the price below the target price is the appropriate profit rate to apply to obtain the work. Exhibit 6-3 describes the schedule, cost, and resource estimating process.

Schedules and costs are intricately interwoven. They impact each other as one and then the other changes over time. But just as schedules and costs are intricately balanced, so are they both dependent upon how resources are allocated across the company's many projects.

Resource Allocations Across Multiple Projects

Addressing the skills and processes necessary to schedule shared resources across multiple projects (portfolio or program) requires an intimate understanding of all the resource skill and experience sets along with the tools to allocate and track these resources. Most standard project management software programs contain resource allocation modules, which not only track individual resources but how they are allocated, how much is allocated, and whether they are overallocated. These programs also produce reports that are the usual communication tools for stakeholder management. So learning how to use these tools is critical to successful project management, particularly in the program and portfolio environment. With these tools and the skills to use them we can:

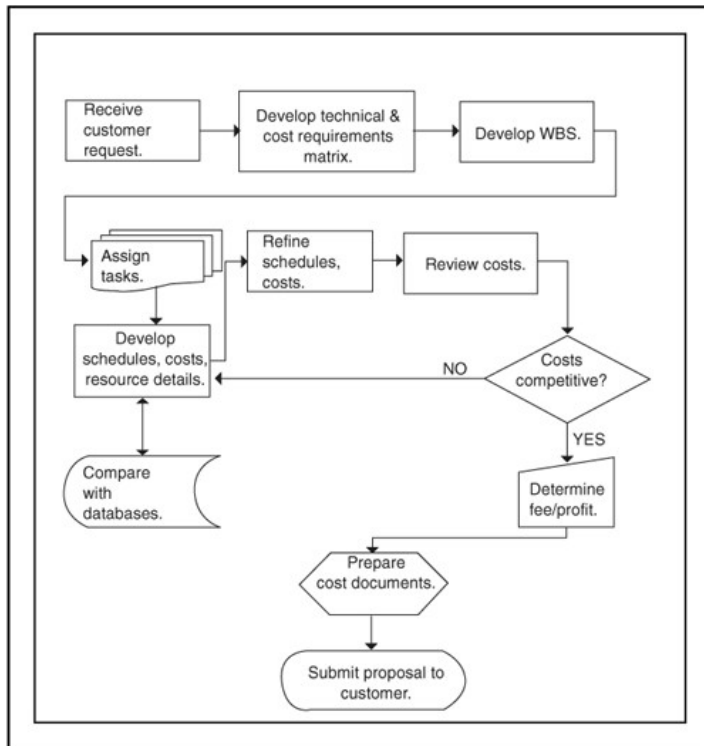


Exhibit 6-3. Sample schedule and cost-estimating process.

- ✓ Balance individual resource load versus capacity across the portfolio.
- ✓ Assign and allocate resource skills effectively across the portfolio.
- ✓ Understand shared resource availability.
- ✓ Make fact-based portfolio schedule trade-offs.
- ✓ Preserve project schedule priorities relative to enterprise objectives.

- ✓ Present useful status (high-level portfolio and detailed project) to stakeholders.

The resource allocation, in conjunction with the final schedule and cost evaluation and validation, is the last step before project plan approval and implementation.

Reviewing, Finalizing, and Implementing the Plan

Plans, by their very nature, are dynamic. The process of developing the project plan is dynamic if not sometimes chaotic, as can be seen from the many interleaving elements that force a balancing act. But once the plan is finalized, a review process should be developed and strictly adhered to. This is the time to get all stakeholders on board with the project and your approach to accomplishing it. Note that a plan is never final, nor is it ever completely accurate, at least at the stage before the project is implemented. This is because risk events occur, customers change the project scope, some task was overlooked, technology becomes obsolete, and the technical approach may not work as planned. Some or all of these things happen in every project, and that is why a project plan requires continuous updating.

The review process can be done with individual stakeholders, which can be time-consuming. Or it can be effectively done as a briefing or a series of briefings to the collective body of stakeholders. Usually, the latter is preferable because not only is it more efficient, but it provides a forum for discussion, which usually results in uncovering other concerns and issues that need to be addressed. In the end, all the stakeholders internal to the organization have to be convinced that the project is one that they can support and that supports the strategic goals of the organization. Once the internal stakeholders sign off on the plan, the customer

then should also sign off. Usually, no one literally signs the project plan, but there is agreement, and official, written notification is provided to the organization (from the external customer) and the project manager. This is the final step before the project actually is implemented.

Project implementation is the actual start of project work. Although a lot of data gathering and even some high-level design work is a part of the plan development, the start of deliverable production can only begin when the plan is approved. Project implementation is usually officially acknowledged with a kick-off meeting, and the customer is invited to attend. After all, this is when we find out if the planning cycle was successful.

Summary

Project plans are dynamic—they have to evolve with the project because of the changing nature of projects. The most successful plans address these three elements:

1. What is to be done?
2. When should it be done?
3. Who should do it?

Answering these three questions determines the shape of the project, what its technical approach is going to be, what resource skill sets are needed and how many, how long it is going to take, and how much it is going to cost.

One key component to developing a successful plan is the review process. Often organizations do not provide formal reviews of the plan on the erroneous notion that there is not enough time in the planning cycle to accomplish them. But every minute spent in the planning cycle pays dividends in the long run. When things go wrong in the implementation phase, the company will rue its

decision not to spend the extra week to thoroughly review the plan and to obtain buy-in from all the stakeholders.

Note

1. "Best Practices: Better Matching of Needs and Resources Will Lead to Better Weapon System Outcomes," General Accounting Office Report GAO-01-288 (March 2001).