

Phase

1

Initiating Process

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Workers may think that projects are launched on nothing more than a grab out of thin air. Some feel that “sweetheart deals” are made before the project is cost justified. Others use sophisticated feasibility analysis as well as business cases to determine whether a project should be launched.

Regardless of how your project is approved, at some point trusted and experienced project managers may have to challenge the rationale of senior managers before placing the project into the portfolio or moving on to the next phase. Let’s face it: These senior managers don’t always have all the information that we project managers may have. We do this based on data and facts. Emotions have no place here.

For example, some project managers working on internal projects (such as capital improvement projects) are advised not to be concerned with the cost; “just do whatever it takes to get the job done” seems to be the order from the sponsor and senior management. As the project manager, you are the steward of company funds. You can help launch projects that will not only provide benefit to the company, but also be cost-effective. But you have to start at the beginning. This phase explores several ways you as the project manager can make a difference as projects are initiated:

- Understand corporate strategy
- Understand finance principles
- Conduct project selection methods
- Establish a progressive business case with built-in feasibility analysis

Task 1.1: Perform Project Assessment

To assess a project properly, you have to start with understanding corporate strategy and its usefulness in selecting one project over another. Strategic plans describe the corporate vision for their target markets with the goal of creating customer satisfaction effectively.

Does your project align with strategic goals? Many projects are planned that do not align with the corporate vision. Some of these projects may benefit one department or another but may not be aligned with corporate strategy. All projects should answer the question, “Does this project benefit the company?” A project manager should be able to ask their sponsor that question and get an honest answer. Nothing is more frustrating to project teams when they have to ask the question, “Why are we doing this?”

Strategic plans are sometimes created that never get implemented because they are always in the “planning” stage. If they aren’t implemented, they serve no useful purpose. Since it is

not cost effective to implement all projects, you must understand and utilize the various project selection methods available within your organization.

Project selection methods help decision makers choose projects based on some criteria. There are several types of project selection methods. In this task we'll show you economic models using net present value and internal rate of return as well as benefit measurement methods that compare projects based on prearranged criteria. We'll also look at a weighted scoring model.

Project managers may also play a pivotal role in the economic engineering of projects and should participate in feasibility studies as well as economic justification of projects. You cannot participate in finance matters unless you have a broad understanding of the concepts of how money is used. In no way is this information intended to be all-inclusive—people earn degrees to master this topic, but we'll explore the basic tenets of finance.

Once you have a good grasp of corporate strategy and business finance, we'll explore a business case and its value to project management.

Scenario

Cimarron Industries is a multimillion-dollar corporation that had very humble beginnings. It is now in the Fortune 500 ranks and owns 200 stores, as well as a centralized textile mill that produces fabrics.

The company was started to produce a series of children's books that were being written by the company founder and current CEO, Olivia Ross. The books were a total success, and the revenues from the books provided seed money to open a line of children's clothing stores patterned after the principal characters in the books.

The lines of clothing for each character were originally designed and created by Ms. Ross and were consigned to a children's boutique of a large clothing chain. They sold out immediately. Later, the apparel stores were also wildly successful. Marketing continues to focus on the superior quality of the clothing at discount store prices.

Based on that success, Ms. Ross would now like to open a line of women's clothing stores called Apples and Pears. Ms. Ross believes that the store would provide what women everywhere are looking for, that is, chic clothing tailored to body types. Those women with expanded waistlines are "apples" and those with large derrières and legs are "pears." The target audience will be middle-aged to senior women, but Apples and Pears will also have a line for younger women with less-than-perfect shapes. It will not focus on plus sizes, just body types in all sizes.

Ms. Ross does not consider herself business savvy. Her degree is in textiles and merchandising, so she counts on Skylar Reese, MBA, chief financial officer (CFO), to guide her business and financial decisions. During their discussions, Ms. Reese reminded Ms. Ross that several other projects are under consideration. One of these is the remodel of the five top-producing stores. Another is the upgrade of equipment at the textile mill.

Ms. Reese believes that to start another project now would tighten their cash flow. She has suggested that a market analysis and economic study of the proposal be conducted and the decision made after that. Ms. Ross agrees.

You have been assigned as the project manager of the Apples and Pears project to assist Ms. Reese any way you can. Ms. Reese has chosen you because your previous position was that of a business analyst. You have been a successful project manager for 5 years now but only on small-scale implementations. You previously had been assigned only to manage the execution of a project. You know your way around the company and most of its processes.

You have taken a recent class on capital budgeting and are anxious to try out what you have learned. It all looks promising, but the answer is in the money.

Since taking your class, you have gathered data about cash flows, and considered operating expenses and earnings before interest and taxes (EBIT) as well as the availability of personnel to work on the project, the training needed, strategic fit, competitive advantage, and a high-level comparative analysis. You have shared this information with Ms. Reese.

Although Ms. Reese is 99% sure that Ms. Ross would approve the project, based on what is known to date, Ms. Reese also wants to take a closer look at the real world in their business. You have been asked to create a progressive business case that would further substantiate your facts known to date by looking at operational issues, revenue tests, and other elements besides financials that could impact the bottom line.

Ms. Reese has discussed your suggestion with James Stevens, a member of the finance committee they both attend, and he decides that a progressive business case should be used. He agrees that it would bring reality to their assumptions and solidify support from those who may oppose the project.

Scope of Task

Duration

This task should take several days, if not weeks, depending on the size of the project and your level of involvement in project selection methods.

Setup

For this task you must know how the project aligns with corporate strategy and you also need an understanding, if not a working knowledge, of key financial principles. The project manager collects data pertinent to the project, and a financial person crunches the numbers. You have to know what the crunched numbers mean and be able to use them to help create your project plan.

For this task you'll also need a basic understanding of how business operates. With that, you can easily assist in the preparation of a business case. Again you'll work with other managers—all of whom will own a piece of the pie.

Caveat

You must have access to information that provides the company's strategic plans, goals, and the like.

During project selection, the project manager usually partners with a financial person to the extent needed to clarify the project to senior management.

The project manager will then typically be given the operations criteria of the business case segment called “probability of success and milestones” because that’s where a project manager’s expertise lies. By *expertise* here, we mean that most project managers have a good understanding of the processes within operations.

Procedure

In this task you’ll take a look at the items you need to understand strategic plans:

- Description of strategic plans
- Elements of a strategic plan
- Project portfolio management
- Business needs

You’ll also learn how businesses or organizations use money and understand its relevance in project management. We’ll review the following:

- Time value of money
- Capital budgeting concepts
- Cash flow concepts
- Present value of money
- Future value of money

You’ll learn different approaches to determine whether projects should be approved or denied. Topics include the following:

- Net present value (NPV)
- Internal rate of return (IRR)
- Benefit measurement methods such as comparative approaches and scoring models

As you learn the elements of a progressive business case, you’ll see how they are iteratively refined. We’ll look at the five segments of a business case and compare their iterative scorecards. Those five segments are:

- Project assessment
- Financials
- Internal issues
- Alternatives and recommendations
- Milestones

Details

Organizations are always in a state of change because of technological advances, legal requirements, market demand, customer requests, and so on. An organization’s *strategic plan* will also change depending on the rate of change and the organization’s ability to manage those changes.

Additionally, it has been our experience that even though complete finance concepts are not generally taught in a project management class, business leaders expect project managers to be able to discuss issues relevant to finance. You may not be involved in the actual selection of projects, but given a basic knowledge of project selection methods and the way your project was chosen, you'll be able to provide logical answers to problems along the way. Our intention is to provide simple finance concepts relevant to the project manager's role in the money game.

Because it's sometimes difficult to choose one project over another, you may have to choose from a variety of project selection methods, but one of them should at least include an objective economic model such as NPV or IRR. You want to be able to defend your ideas with facts and figures as well as your own subjective thoughts and ideas.

You can defend your ideas quite well, though, if you use a business case. Business cases are frequently used to assess projects. Business cases are prepared by people with knowledge of corporate finance and project management. A progressive business case has built-in feasibility analysis and provides a "score" at the completion of each phase. A minimum score is needed in order to move to the next phase. Each phase has its own "scorecard" that measures progress by the use of a minimum score. We'll focus on the following scorecards:

- Project selection scorecard
- Project charter sign-off scorecard
- Project planning scorecard

Description of Strategic Plans

Strategic plans describe the corporate vision for their target markets with the goal of creating customer satisfaction effectively.

Strategic plans that aren't implemented serve no useful purpose. It is imperative that the strategic plan be "in the headlights," so to speak, in order to solve problems and create marketing, product development, research and development, capital improvement, and other business plans. Optimal decision making is the ultimate result when all plans and problems are integrated and supported.

Elements of a Strategic Plan

The elements of a strategic plan typically answer the following questions: Where do you see yourself going with your business? Is the business and market environment conducive to your success? How do you get there from here?

Project plans should map back to strategic plans. It becomes a tactical plan along with the marketing plan, business plans, and so forth. So it is essential that you understand the elements of a strategic plan, which include, in part, these elements:

- Value and vision statement
- Mission statement
- Critical success factors for the business
- What kind of image you want
- What you want to be known for

- Where you want to be in five years
- Key business drivers
- Actions for achievement
- Measurement system for success

Projects should be sanctioned based on their alignment with strategic goals and objectives.

Measurement System for Success

Strategic metrics are critical to an organization's success. If you have a stable environment, there is more tolerance for mistakes and a greater ability to recover from mistakes. In an unstable environment, very little tolerance for error exists, and measurements must be taken more often to allow critical adjustments to strategies.

Strategic measurements are common planning tools that have increased importance in areas of uncertainty. They also add substance and give feedback regarding the efficacy of their execution. In the words of Richard T. Quinn, vice president of quality at Sears: "You simply can't manage anything you can't measure."

Project Portfolio Management

Project portfolio management is a business process that takes a holistic view of projects and the total investment required of them. In that way, decisions on funding can be prioritized based on corporate strategy and organizational alignment with that strategy, as well as resources available. Investments should not be made based on the political clout of one business unit over another.

For example, most large corporations have business units, and those units have senior managers. The senior managers, with help from their team, forecast which projects will benefit their business unit and budget accordingly. Why not use portfolio management? The business unit leaders meet with one another and throw all their projects on the table. The team prioritizes those projects based on what's best for the business rather than what's best for the business unit. The benefits are obvious:

- Results in rational decisions about funding
- Provides an optimal mix of investment risk and reward
- Facilitates the balance of riskier, higher-reward projects vs. safer, lower-reward ones
- Categorizes, prioritizes, and monitors new and ongoing investments
- Facilitates better communication between project owners and business leaders
- Results in greater understanding and cooperation over funding allocation—everybody sees where the dollars are flowing and why
- Provides greater business accountability for investments
- Allows portfolio management to be used to assign responsibility to appropriate leaders
- Enables more efficient use of human resources—the number of staff and managers allocated to various projects becomes more visible and comparable
- Exposes redundant and overlapping projects

There are a few pitfalls to portfolio management, however:

- Some business unit leaders may feel as if their position is in jeopardy if they are not funded for all of their project requests.
- Even in the senior ranks, it is sometimes difficult to change thinking.

It will be up to senior executives to support the process and lead their direct reports through the transition.

Define Business Needs

The business need for the project should tie back to the strategic plan. Typical business needs might be as follows:

- Increase revenue
- Increase market share
- Increase customer satisfaction
- Reduce expenses
- Update technology
- Update infrastructure
- Create new products and services
- Perform capital improvements
- Comply with regulatory or legal mandates

Key business drivers that help create strategic plans may change from year to year depending on the economy or the availability of key personnel. One year the strategic plan might be to reduce expenses by laying off personnel. Another may be to change a capability in order to remain competitive. There are many others. It is your job to always be able to answer the question, “Why are we doing this?”

Hands-on 1.1: Testing Your Knowledge of Corporate Strategy

1. Why does a project manager have to understand the corporate strategy?
2. List three elements of a strategic plan.
3. Why is portfolio management important?
4. What are the business needs for the Apples and Pears project?

Time Value of Money

One of the basic concepts of business economics and managerial decision making is that the value of an amount of money is a function of the time of receipt or disbursement of cash. A dollar received today is more valuable than a dollar to be received at some future period of time. The only requirement for this concept to be valid is that a positive rate of interest exists

wherever you invest your funds. We'll further explore this concept by showing you how to find the present value of a future amount and the future equivalent of a present amount. Time value of money is the heart of capital budgeting.

Capital Budgeting Concepts

Capital budgeting is used for investment decision making and may include the following goals:

- Maximize shareholder wealth
- Consider all cash flows
- Discount cash flows at the cost of capital
- Attempt to place an economic value on the strategic implications of new projects and include them in the economic analysis
- Quantify the strategic benefits of new projects in nonfinancial terms (for example, quality improvement or reduced lead time)

Capital budgeting's purpose is to:

- Generate and gather investment ideas
- Estimate/forecast investment costs and benefits
- Analyze/evaluate the costs and benefits of each alternative
- Select among the alternatives and implement the investment chosen
- Evaluate the implemented investment

Cash Flow Concepts

Because investment decision making requires knowledge of cash flows, let's take a brief look at a simple cash flow illustration (see Table 1.1). A company spends \$100,000 on a concept study and uses the following facts to determine cash flow:

Equipment	\$2,400 (year 0)
Depreciation	\$450, \$360, \$270, \$180, \$90
Training costs	\$816 (year 0)
Incremental sales	\$7,500 with a 10% annual increase over six years
Incremental operating expenses	\$6,500 with a 6% annual increase over five years

TABLE 1.1 Sample cash flow

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Equipment	-\$2,400.00					
Depreciation		-\$450.00	-\$360.00	-\$270.00	-\$180.00	-\$90.00

TABLE 1.1 Sample cash flow (continued)

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Training costs	-\$816.00					
Incremental sales		\$7,500.00	\$8,250.00	\$9,075.00	\$9,982.50	\$10,980.75
Operating expenses		-\$6,500.00	-\$6,890.00	-\$7,303.40	-\$7,741.60	-\$8,206.10
Earnings before interest and taxes minus total expenses (EBIT)		\$550.00	\$1,000.00	\$1,501.60	\$2,060.90	\$2,684.65
Taxes = 40%		-\$220.00	-\$400.00	-\$600.64	-\$824.36	-\$1,073.86
Cash flow	-\$3,216.00	\$330.00	\$600.00	\$900.96	\$1,236.54	\$1,610.79

Notice that in year 0, there are only expenses. The following years show depreciation as a negative number, which is subtracted from the incremental revenue as well as the operating expenses to come up with the EBIT figures. Taxes are then subtracted to find the cash flow. Most cash flows are more complicated and include adding back the depreciation to receive a net cash flow.

Present Value

Most large companies today use some form of discounted cash flow (DCF) techniques in investment decision making (capital budgeting). To perform a DCF analysis, you must find the present value of future sums of money. If you are entitled to receive \$200 at the end of two years, you might consider receiving a lesser amount today (say, \$188.68), provided that you could invest it over the next two years and earn enough to receive the \$200.

The formula for present value is:

$$PV = FV/(1 + r)^t$$

where $(1 + r)^t$ is the present value of a dollar to be received at the end of period t when the time value of money is r and FV is the future value. The term $1/(1 + r)^t$ is called the *present value factor*, or *discount factor*.

These discount factors determine potential growth. Present value is equal to the future value times the discount factor. These factors can be computed in three ways: via tables, hand calculators, or computer programs. Tables are the easiest. Table 1.2 is an example of discount factors.

TABLE 1.2 Discount factors

n/r	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.8116	0.7972	0.7831	0.7695	0.7561
3	0.9706	0.8423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7312	0.7118	0.6931	0.6750	0.6575
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7639	0.7350	0.7084	0.6830	0.6587	0.6355	0.6133	0.5921	0.5718
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5935	0.5674	0.5428	0.5194	0.4972
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5346	0.5066	0.4803	0.4556	0.4323
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4817	0.4523	0.4251	0.3996	0.3759
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4339	0.4039	0.3762	0.3506	0.3269
9	0.9143	0.8363	0.7664	0.7026	0.6448	0.5919	0.5439	0.5002	0.4604	0.4241	0.3909	0.3606	0.3329	0.3075	0.2472
10	0.9053	0.8303	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3522	0.3220	0.2946	0.2697	0.2472

What is the present value of \$1 to be received three time periods from now if the time value of money is 0.10 per period?

In Table 1.2 at the intersection of 10% and three time periods, the value equals 0.7513. Therefore, if you invest \$0.7513 to earn 10% per year, after three years you'll have \$1.

What is the present value of \$100 to be received three time periods from now if the time value of money is 0.10 per period? Because $1/(1 + 0.1)^3 = 0.7513$ (according to the discount table in Table 1.2), you can see in Table 1.3 that the present value of \$100 is \$75.13 at time 1, \$82.64 at time 2, and finally \$100 at time 3.

TABLE 1.3 Present value example

Time period	Investment at beginning of period	Interest	Investment at end of period
1	\$75.13	7.513	\$82.64
2	\$82.64	8.264	\$90.91
3	\$90.91	9.091	\$100.00

With discount factors, you can compute the present value of any single cash flow. But in most applications you need to be able to calculate the present value of any sequence of cash flows.

Present Value Addition Rule

The *present value addition rule* states that the value of any set of cash flows is the sum of the present value of each of the cash flows in the set. For example, using Table 1.2, what is the present value of two cash flows, \$100 to be received at the end of one period from now and \$200 to be received two periods from now, if the time value of money is 0.10? Table 1.4 shows an example of how to compute this.

TABLE 1.4 Present value addition rule

Period	Cash flow	Discount factor	Present value
1	\$100.00	0.9091	\$90.91
2	\$200.00	0.8264	\$165.28
Present value using 0.10 =			\$256.19

By using the formula for the present value of a future cash flow and the present value addition rule, you can calculate the present value of any possible cash flow.

Future Value

Assume that you have \$1 now and can invest it to earn i interest. After one period, you'll have \$1 plus the interest earned on the \$1. Let FV be the future value and r be the annual interest.

Repeating the process, at time 2 you'll have:

$$FV = PV (1 + r)^2$$

If $r = 0.1$ and $n = 2$, you'll have:

$$FV = PV (1 + r)^2 = (1 + 0.1)^2 = \$1.21$$

If, instead of starting with \$1, you start with a present value, PV, of \$50, the value at time 2 is:

$$FV = PV (1 + r)^t = \$50 (1.0 + 0.1)^2 = \$60.50$$

At 10% interest, \$50.00 grows to \$55.00 at time 1. The \$55.00 (still at 10% interest) grows to \$60.50 at time 2. This equation is the standard compound interest formula for the future value of a present sum. The term $(1 + r)^t$ is called the *accumulation factor*. It shows how to calculate future values of a present sum: the dollar amount you'll have in n periods (which could be months, quarters, years, and so on) in the future if a present sum of PV dollars is compounded for n periods at an interest rate of r per period. Instead of computing future values, business decisions are frequently made based on present values.

Hands-on 1.2: Testing Your Knowledge of Finance Principles

Make the calculations necessary to show which of the following statements are true and which are false if the interest rate is 5% per year. Remember that n is an accumulation factor and not a multiplier.

1. \$98.00 now is equivalent to \$105.60 one year from now. (True or false?)
2. \$200.00 one year ago is equivalent to \$205.00 now. (True or false?)
3. \$3,000.00 now is equivalent to \$3,150.00 one year from now. (True or false?)
4. \$3,000.00 now is equivalent to \$2,887.14 one year ago. (True or false?)
5. Interest accumulated in one year on an investment of \$2,000.00 is \$100.00. (True or false?)

Economic Models

Sometimes it is difficult to choose one project over another. You may have a variety of project selection methods, but one of them should at least include an objective economic model such as NPV or IRR. You want to be able to defend your logic with facts and figures as well as your own subjective thoughts and ideas.

ECONOMIC MODEL: NET PRESENT VALUE

NPV is the current market value of a cash flow amount at time n if the discount factor (Dn) is based on a discount rate r that is the market price for the use of one dollar. It is an application of the present value concept, in which the values are summed over time. NPV is also known as the market value for the stream of cash.

If the NPV is greater than 0, the investment is generally considered acceptable. You can still choose differently based on other factors. With zero taxes, the NPV of an investment may be described as the maximum amount a firm could pay for the opportunity of making the investment without being financially worse off.

The NPV of the investment is the sum of the present values of the cash flow minus the initial investment. NPV is determined by following these steps:

1. Choose an appropriate rate of discount.
2. Compute the present value of the cash proceeds expected from the investment.
3. Compute the present values of the cash outlays required by the investment.
4. Sum the present values of the proceeds minus the present values of the outlays.

Following along in Table 1.5, assume that an investment costs \$10,000,000 and returns \$12,100,000 a year later. If the rate of discount is 10%, a company could make a maximum immediate outlay of \$11,000,110 in the expectation of receiving \$12,100,000 a year later. If it can receive the \$12,100,000 with an actual outlay of only \$10,000,000, the NPV of the investment will be \$1,000,110. In other words, the \$1,000,110 represents the difference between the present value of the proceeds, \$11,000,110, and the actual outlay of \$10,000,000. The value in period 0 is negative because that is our original investment.

TABLE 1.5 Net present value example

Period	Cash flow	Present value factor	Present value
0	-\$10,000,000	1.000	-\$10,000,000
1	\$12,100,000	0.9091	\$11,000,110
		NPV =	\$1,000,110

NPV is widely used and accepted by most organizations. It's simple to calculate and easy to understand. Additionally, NPV in this example is positive, indicating that the investment is acceptable. NPV has the following advantages:

NPV is valid. It directly measures the present market value of one or more cash flows considered separately or in combination.

NPV is effective. As a decision variable, NPV provides all the usefulness of any other variable and also provides additional strengths.

NPV is reliable. If the rules for calculating NPV are followed, any analyst will produce the same result for a given stream of cash flows and a discount rate based on the market cost of money.

NPV is flexible. After the NPV has been calculated for a portion of any project, it can be used without recalculation to include that portion in any other investment.



In several examples we have shown the use of NPV at either time 0 or time 1. If we start with time 0, that is the *beginning* of the time period. If we use time 1, we are saying that the investment has been working for a period of time (for example, the *end* of the first year).

It is also important to note that if you start with time 0, you stay with time 0 to calculate NPV. If you start with time 1, you stay with time 1 to calculate NPV.

Now that you know the steps needed to calculate NPV, let's try it.

Hands-on 1.3: Testing Your Knowledge of NPV

1. Assume that there is an investment to pursue. The initial investment is \$12,337 (year 0). Because this amount is the initial investment, it appears as a negative number. The cash flow at the end of the first year (period 1) is \$10,000. The cash flow at the end of the second year is \$5,000. Using Table 1.6, compute the NPV of this investment by using 10% as the discount rate.

TABLE 1.6 Determine NPV problem 1

Period	Cash Flow	Present Value Factor	Present Value
		NPV =	

2. The remodel project initial investment is \$5 million, and the cost of money is 9%. Cash flow for year 1 is \$1 million, for years 2–3 is \$900,000, and for years 4–6 is \$750,000. Using Table 1.7, determine the present values for each year of the remodel project.

5. What is the NPV of the Apples and Pears project?
6. If the investment for the Apples and Pears project increased to \$8,750,000, how would that change the NPV?
7. Which project should be pursued?
8. What other project selection methods could you pursue?

ECONOMIC MODEL: INTERNAL RATE OF RETURN

The internal rate of return (IRR) is the value of r that makes the NPV = 0. The IRR is, therefore, a summary measure of an investment (not just of the cash flows) that is useful only when comparing that investment with another identical investment. For example, comparing two capital improvement projects is considered acceptable when using IRR. Comparing a construction project and an IT project is not.

Using IRR can create serious challenges for those who manage capital budgets. When managers decide to finance only the projects with the highest IRR, they may be making a decision that is not as favorable as they think. For example, when all elements of the cash flow stream are known, the IRR provides some information about a particular stream of cash. Each financial investment in Table 1.9 has an IRR of 10%.

TABLE 1.9 Internal rate of return example

Time period	0	1	2
A	-\$100	\$0	\$110
B	-\$100	\$10	\$110
C	-\$100	\$110	\$110

Notice that the investments shown in column zero are negative values.

In scenario A, \$100 is invested at 10% for two years before there is a return on the investment of \$100.

In scenario B, \$100 is invested at 10% for two years also, but the interest payment is made at the end of year 1 and principal is returned at the end of year 2 along with an interest payment for the last year.

In scenario C, principal *and* interest are paid at the end of year 1. The principal (\$100) is then invested for the second year at the same rate (10%).

These examples have quite different scenarios, but all have the same IRR. Be careful when using IRR. Although it is quite possible that each of the alternatives A, B, and C, would be viewed as the same by one or more investors, it is also possible to alter the differences of the scale so the IRR would be the same for financial investment opportunities that would otherwise appear very different—say, when compared with one another using NPV.

Benefit Measurement Methods

Sponsors and corporate leaders always want to have confidence in the decisions that they make. They are fed information from project managers and others to assist them. A variety of benefit measurement methods are available that will assist project managers in providing acceptable and meaningful information to their sponsor and leaders. You'll explore the following:

- Comparative approaches
- Weighted scoring models
- Business cases

BENEFIT MEASUREMENT METHOD: COMPARATIVE APPROACH

Table 1.10 illustrates a comparative approach. There are three steps:

1. Criteria are determined. (These are typically preassigned.)
2. Each criterion is compared.
3. The decision is weighed.

TABLE 1.10 Comparative approach

Criteria	Project 1	Project 2
1. Project maps to business vision, mission, goals, and corporate strategy.	Yes/No	Yes/No
2. Project delivers sufficient value to the business.	Yes/No	Yes/No
3. Project impacts or relates to a project or application within other business units.	Yes/No	Yes/No
4. Alternative analysis done.	Yes/No	Yes/No
5. Project follows company standards.	Yes/No	Yes/No
6. Team members have appropriate skill set and are available.	Yes/No	Yes/No
7. Other projects similar to this project address similar requirements.	Yes/No	Yes/No
8. Would any existing projects have to be discontinued when this project is completed?	Yes/No	Yes/No

It is important to remember that most projects also use an economic model before a decision is made or include an economic model as one of the criteria.

BENEFIT MEASUREMENT METHODS: WEIGHTED SCORING MODELS

The same comparison can be used but with a weight associated with each question. Each weight should be described to avoid confusion (for example, 5 = Mission critical, 4 = Very important, 3 = Important, 2 = Nice to have, 1 = Not important). In this case the scale is 1–5, with 5 being the highest. Other scoring models may have a different range. There are three steps for this process:

1. Assign a weight to each criterion.
2. Rate each criterion.
3. Multiply the weight by the rating to get the score.

Table 1.11 shows an example of weighted scoring.

TABLE 1.11 Weighted scoring

Criteria	Project 1			Project 2		
	Weight	Rate	Score	Weight	Rate	Score
1. Project maps to business vision, mission, goals, and corporate strategy.	5	5	25	5	3	15
2. Project delivers sufficient value to the business.	5	4	20	5	5	25
3. Project impacts or relates to a project or application within other business units.	4	4	16	4	4	16
4. Alternative analysis done.	4	3	12	4	2	8
5. Project follows company standards.	4	3	12	4	4	16
6. Team members have appropriate skill set and are available.	3	3	9	3	3	9
7. Other projects relate that address similar requirements.	4	2	8	4	3	12
8. Would any existing projects have to be discontinued when this project is completed?	3	2	6	3	1	3
		Total	108		Total	104

Weighted scoring models are simple and provide consistency in their approach. For small projects (and your company would have to decide what is considered *small*), weighted scoring models may be enough. But most companies use an economic model as well.

There could be challenges with scoring models. Projects may be ranked and scored subjectively (without data and facts) instead of objectively. There may be inconsistencies in the selection committee based on politics, a personal agenda, and so on. Senior management may override the decision. If these challenges do exist, consider revamping the criteria so that all are in agreement.

Hands-on 1.4: Testing Your Knowledge of Benefit Measurement Methods—Scoring Models

Answer the following questions:

1. For each criterion found in Table 1.11, what information could you provide that would justify the rating and score?
2. Select five additional criteria. Weight and rank them. Determine the score. How could this impact the result in question 1?
3. What are the advantages of scoring models?
4. Is a comparative approach enough? Why or why not?

Business Cases with Built-In Feasibility Analysis

The difference between a business case and other project selection methods is that a business case affords a higher level of confidence to decision makers, because it takes a holistic view of the company. The business case is completed through the planning phase, thus before major expenditures occur. Additionally, the business case can be followed through the end of the project and beyond. For instance, if the business goal of the project were to increase revenues, it may take another year or more to see whether revenues have increased.

A minimum score is assigned to each of the criteria within a segment of the business case. If the total minimum score is not achieved, the project cannot proceed to the next activity.

The minimum values have been preassigned to each criterion. A project selection committee usually decides the minimum score for each scorecard. In the real world, this business case is repeated for the project charter sign-off and planning activities. Each progressive phase increases the minimum score that enables a decision maker to decide whether the project should continue.

For example, if the minimum score through project charter sign-off does not meet the minimum score for both activities (selection and charter), the project cannot advance to planning. Rather than show the table in its entirety for charter and planning, we include only summary minimums. Table 1.12 is an example of a minimum scorecard for the project selection activities.

TABLE 1.12 Project selection scorecard

1.	PROJECT ASSESSMENT			
A.	MARKET ANALYSIS			SCORE
	Customer Initiated Request or Customer Expectation	Minimum Score	0	
	0 No request 5 Informal request 10 Formal request/expectation			
	Meets Customer Need	Minimum Score	5	
	0 No needs identified 5 Perceived fit with need(s) 10 Known fit with need			
	Market Window	Minimum Score	4	
	0 Can't meet—delivery time exceeds customer requirements 5 Perceived ability to meet customer requirements 10 Known ability to meet customer requirements			
	Willingness to Pay	Minimum Score	5	
	0 Known unwillingness 5 Perceived willingness 10 Known willingness at proposed price			
	Market Potential	Minimum Score	3	
	0 No potential 3 Perceived potential 5 Some customers want 10 Most customers want			
	Forecast	Minimum Score	3	
	0 No forecast 5 Draft forecast 10 Firm forecast from customers with commitments from account teams and customers			
B.	STRATEGIC FIT			SCORE
	Product Alignment with Strategy	Minimum Score	3	
	0 No fit with any Business Unit Strategy 5 Fits with half of Business Unit strategies 10 Fits with all of Business Unit strategies			
C.	COMPETITIVE ADVANTAGE			SCORE
	Creates Competitive Advantage	Minimum Score	0	
	0 No advantage 5 Perceived advantage or meets competition 10 Clear advantage			
D.	PROBABILITY OF SUCCESS			SCORE
	Availability of Technology	Minimum Score	5	
	0 No advantage 5 Perceived advantage or meets competition 10 Clear advantage			
	Ordering	Minimum Score	3	
	0 Means not available 5 Perceived feasibility 10 Known feasibility—mechanized systems ready when needed			

(continues)

TABLE 1.12 Project selection scorecard (*continued*)

Billing	Minimum Score	3	
Means not available Perceived feasibility Known feasibility—mechanized systems ready when needed			
Fraud Control	Minimum Score	3	
0 No advantage 5 Perceived advantage or meets competition 10 Clear advantage			
Maintenance	Minimum Score	3	
0 Means not available 5 Perceived feasibility 10 Known feasibility—available when needed			
Installation/Deployment	Minimum Score	3	
0 Means not available 5 Perceived feasibility 10 Known feasibility—available when needed			
Systems Synergy	Minimum Score	3	
0 All new systems needed 5 Major modifications needed 10 Minimal modifications needed			
Risk Versus Benefits	Minimum Score	3	
0 Risks outweigh benefits 5 Risks and benefits are equal 10 Benefits outweigh risks			
		PROGRAM ASSESSMENT MINIMUM SCORE	49
		PROGRAM ASSESSMENT ACTUAL SCORE	
		DIFFERENCE	
2. FINANCIALS			
A. Quality of Financial Analysis	Minimum Score	3	SCORE
0 Not done 1 Rough estimate of revenue, expense, capital or price and estimated incremental investment (per unit basis) 3 Estimated demand, revenue, expense, capital in business case format (income statement, etc.) 5 Preliminary financial analysis including sensitivity analysis of variables, functional units involved in estimating costs where appropriate 7 Financial analysis including best/worst case scenarios, sensitivity, analysis, and functional units involved in estimating costs where appropriate 10 Financial analysis including Monte Carlo risk analysis, best/worse case scenarios, sensitivity analysis, and service units involved in estimating costs where appropriate			
B. Financial Desirability of Program	Minimum Score	1	SCORE
0 Not done 1 Project/Program is expected to break even within 5 years 3 Project/Program has a positive NPV within the study life and has a discounted break even of 5 years or less 5 Project has significant gross margin/EBITDA opportunity and impact			

TABLE 1.12 Project selection scorecard (continued)

	7 Project/program meets 3 of the following 4 criteria: 1. A modified profitability index of 2.0 or greater 2. A program rate of return 10% above the cost of capital 3. A discounted break-even of 5 years or less 4. And/or shareholder value greater than \$5M 10 Project/program has: 1. A modified profitability index of 3.0 or greater 2. A program rate of return 15% above the cost of capital 3. A discounted break-even of 3 years or less 4. And/or shareholder value greater than \$10M 5. Worst-case scenario meets all of criteria #5		
	FINANCIALS MINIMUM SCORE		4
	FINANCIALS ACTUAL SCORE		
	DIFFERENCE		
3. INTERNAL ISSUES			
A.	Effects of Preliminary Disclosure	Minimum Score	3 SCORE
	0 Effects of disclosure either have not been considered, or considered to be generally negative 1 Net impacts of full disclosure to competitors considered to be generally neutral 3 Net impacts of full disclosure to competitors considered to be generally positive		
B.	Contract Development	Minimum Score	2 SCORE
	0 Not done 3 Outline completed 7 Draft completed, issues resolvable 10 Contract completed		
C.	NET REVENUE TEST INPUTS/ANALYSIS		SCORE
	Impact on Cross Elastic (CE) and Complimentary Services	Minimum Score	5
	0 Not done or negative net impact 5 Neutral net impact 10 Positive net impact		
	Demand Analysis for New Services, Cross Elastic, and Complimentary Services	Minimum Score	5
	0 Not done 5 Preliminary analysis completed, somewhat rough but much research either completed or in process 10 Analysis well developed and documented		
	Net Revenue Test Demand Relationships Analysis	Minimum Score	5
	0 Not done or negative net impact 5 Neutral net impact 10 Positive net impact		
	Legal	Minimum Score	4
	0 Violates rules/law 3 Issues identified 4 Legal department contacted 5 Perceived ability to resolve issues 10 Does not violate rules/laws		

(continues)

TABLE 1.12 Project selection scorecard (*continued*)

		FINANCIALS MINIMUM SCORE	24
		FINANCIALS ACTUAL SCORE	
		DIFFERENCE	
4. ALTERNATIVES AND RECOMMENDATIONS			
A.	Pricing Plan (First Year)	Minimum Score	3 SCORE
	0 Not done 5 Rough draft 10 Completed		
		ALTERNATIVE AND RECOMMENDATIONS MINIMUM SCORE	3
		ALTERNATIVE AND RECOMMENDATIONS ACTUAL SCORE	
		DIFFERENCE	
5. MILESTONES			
A.	First Year Milestones by Quarter (including tracking mechanisms and contingencies)	Minimum Score	0 SCORE
	0 Not done 5 Rough draft 10 Completed		
		MILESTONES MINIMUM SCORE	0
		MILESTONES ACTUAL SCORE	
		DIFFERENCE	

Hands-on 1.5: Testing Your Knowledge of Business Cases

Using your common sense and experience, please answer the following questions:

1. Who should prepare the business case? Why?
2. What do you think are the advantages of a project manager participating in the business case process?
3. Are there disadvantages? Why or why not?
4. Is a business case enough? Why or why not?

Now that you have reviewed the business case, Table 1.13 provides a summary for project selection, charter sign-off, and planning. Notice how the scores progressively increase.

Now that you have an overview of corporate strategy, you have the ability to map your project activities to the corporate issues that matter the most—money.

You also have a good grasp of finance, how projects are selected, and how business cases evolve. You are ready to move forward! Remember, at the top of the food chain, it's always about money. You can now plan your project brilliantly, present your project brilliantly, and defend your project brilliantly: with data and facts relative to money!

TABLE 1.13 Summary scorecards for project selection, charter sign-off, and planning

Summary Scorecard for Project Selection			
	Minimum Score	Actual Score	Difference
PROGRAM ASSESSMENT	49		
FINANCIALS	4		
INTERNAL ISSUES	24		
ALTERNATIVES AND RECOMMENDATIONS	3		
MILESTONES	0		
TOTAL	80		

Summary Project Charter Sign-off			
	Minimum Score	Actual Score	Difference
PROGRAM ASSESSMENT	76		
FINANCIALS	8		
INTERNAL ISSUES	33		
ALTERNATIVES AND RECOMMENDATIONS	10		
MILESTONES	5		
TOTAL	132		

Summary Project Planning			
	Minimum Score	Actual Score	Difference
PROGRAM ASSESSMENT	117		
FINANCIALS	12		
INTERNAL ISSUES	43		
ALTERNATIVES AND RECOMMENDATIONS	19		
MILESTONES	9		
TOTAL	200		

Task 1.2: Creating the Scope Statement

The purpose of creating a scope statement at the beginning of the project is to have a basis on which to make future project decisions. The project scope statement should give senior management a holistic overview of what to expect throughout the life of the project and what the desired final outcome of this project will be.

At this stage in the process, you describe what you know. This high-level scope statement then becomes part of the project charter. Further planning steps will progressively elaborate on this initial scope statement, providing additional detail for estimating, assigning, controlling, and finally accepting the project deliverables.

Scenario

Rather than reinvent the wheel, you obtained the original project plans for Cimarron's children's stores; although the plans are outdated, you were able to glean and update what you feel is enough information to develop a scope statement. These facts supplement additional information you have obtained. You learned through your interviews with the stakeholders that not everyone was wild about the project.

You have been privileged to be a part of some strategic planning sessions because your mentor is also your project sponsor. Terri Higgins is a Project Management Professional (PMP)[®], and hopefully you'll become one by the end of December, because this project will give you the required hours needed to sit for the PMP exam. She will be a huge help to you. Thankfully, you know that project management is a key business process and is supported by your superiors. In fact, there is a central project management office (PMO), with a manager of project managers who provides project management services, support, training, and mentoring to their staff. You belong to this group.

You now know that for Phase 1 of the project, trial stores will be constructed at a new mall being built in Bellevue, Washington. This is a high-end location, but the company is betting that regardless of their customers' spending habits, beautiful clothing that fits and can be purchased at a reasonable price will appeal to most shoppers. The other location will be at Washington Square, just south of Portland, Oregon, where there is a broader range of spending habits.

These stores are to be elegant, with plush carpeting, soft music playing, designer showcasing, private dressing rooms, ambient lighting, as well as displays for jewelry, accessories, and perfume items. There will also be a second-floor bridal gallery.

Senior management initially decided that developing and advertising the brand, hiring personnel, and performing any IT work would be considered a cost of doing business. You and Ms. Reese have since convinced senior management that the cost for that work will be at least \$1,750,000 more than the original estimate and should be included in the project so that real costs can be determined for future use. They agreed to add that amount to the budget.

The project will not include the cost of leasing space at the malls because that is considered a yearly operational cost.

Terri Higgins has advised you that the project has been conditionally approved based on the business case you helped to prepare. The rough order-of-magnitude budget for setting up the two stores is \$8,750,000, to be allocated as shown in Table 1.14.

TABLE 1.14 Preliminary project budgets

Budget item	Amount
Advertising	\$1,000,000
Space planning	\$5,000
Construction	\$3,600,000

Budget item	Amount
Non-inventoried furnishings	\$50,000
Design of clothing	\$1,250,000
Hiring and training of personnel	\$50,000
Information technology	\$700,000
Manufacturing costs	\$2,075,000
Delivery and setup	\$20,000
Total	\$8,750,000

This number will be refined when the details of the project are known. The target date for completion is November 1 of next year for both stores, just in time for the holidays.

Scope of Task

Duration

The duration might be hours or days, depending on the complexities of the project.

Setup

This is not a task you'll do alone. You'll enlist your team members and others to assist you with this task. Don't forget your sponsor!

Caveat

Be sure to include geographically dispersed team members. The duration of tasks may be affected, particularly if team members live in other countries or time zones.

Procedure

For this task you'll build a project scope statement that will include, but is not limited to these factors:

- Project objectives
- Product scope description
- Project requirements
- Initial project organization

Additionally, this task will describe the characteristics needed to staff a project with the right people who have the right skills, who are available when needed for the right duration within the planned budget.

Details

It has been said that a poorly prepared scope statement is often the cause of major cost overruns, schedule delays, poor morale, and ultimately project failure. So where do you get all of the information needed to create the scope statement? You can rely on experts; use templates, forms, and past history; and talk to fellow project managers, who may be your best source if they have managed the same kind of project. You have already conducted a stakeholder analysis, and much of the information you'll need comes from that.

A properly prepared baselined project scope statement is comprehensive enough to provide a common understanding of the project objectives and deliverables among all the stakeholders.

After the scope is baselined, it allows for evaluating change requests on additional work to verify whether they are within the boundaries of the originally approved work effort.

Business Goals vs. Project Objectives

Business goals describe *what* you want to accomplish. The business goals should align with corporate strategy. Project objectives describe *how* you are going to accomplish the business goal. The best method to use when writing project objectives is the SMART method, a popular method that has been around for many years. The objectives should be as follows:

Specific The objective tells exactly what, where, and how the problem or need is to be addressed and should be written in a clear, concise, and understandable way.

Measurable Metrics need to be put in place so that you know whether you succeeded.

Accurate The objective should be described precisely so errors do not occur.

Realistic The objective should be a result that can be achieved in the time allowed.

Time-bound The objective must include a specific date for its achievement.

Product Scope Description

If a project is in-house, the product scope description indicates the characteristics of the end result of the product within the project and should map back to the business goals. Because you'll know more as the project progresses, this description will be progressively elaborated.

If the project comes from an external source and will be performed under a signed contract, it is referred to as a *statement of work* or *contractual statement of work*.

This activity should be the driving force for what you want to end up with, so it is imperative that the statement not be confusing. Most elements of the project management plan (which we'll discuss later) should map back to this description. Just remember that the project scope is the sum of all products and the product scope is the sum of all items creating an individual product.

Hands-on 1.6: Testing Your Knowledge of Goals and Objectives

Given what you now know about the Apples and Pears project, write the business goals for this project and the project objectives to achieve them. Use the following SMART model (Table 1.15) to assist you:

TABLE 1.15 SMART goals and objectives exercise

SMART	Business Goals (What)	Project Objectives (How)
Specific		
Measurable		
Accurate		
Realistic		
Time-bound		

Hands-on 1.7: Testing Your Knowledge of the Product Scope Description

Given what you now know about the Apples and Pears project, use Table 1.16 to write the product scope description for two products:

TABLE 1.16 Product scope descriptions

Product Scope Description
1.
2.

High-Level Project Requirements

Project requirements describe the characteristics of the deliverables. *A Guide to the Project Management Body of Knowledge (PMBOK® Guide), Fourth Edition*, p. 104, describes requirements as “the quantified and documented expectations of the sponsor, customer and other stakeholder.”

Requirements are often not fully known at the onset of a project. A good rule of thumb to follow is to continue to accept requirements until actual work begins. It is much easier to change a document than to perform rework out in the field or when developing software.

So where do we get these requirements? This is something you’ll never want to do alone. However, you may find yourself eliciting and documenting them alone—but you should not be the sole source of information about what is needed! Business process owners, team members, consultants, customers, management staff, and experts are just a few of the people you can enlist to be sure you have all the requirements and only the requirements necessary to fulfill the goals of the project.

A simple approach is to validate the needs and expectations of your customers. You simply take each need and expectation and do the RUMBA! Ask, “Is this requirement...?” Table 1.17 describes the elements of the RUMBA.

TABLE 1.17 The RUMBA

Responsible	You or your organization can meet the requirement (it does not violate company procedures, equipment capability, and so forth).
Understandable	The customers verify that you understand what they require from you.
Measurable	In some way, you can objectively determine the degree or frequency of meeting the requirement.
Believable	Employees will agree to strive for that level of achievement.
Achievable	Can you meet the requirement (is the desired performance level theoretically possible)? If not, you may need to renegotiate as facts and data become available.

For each agreed-upon and reasonable expectation, if all answers to the RUMBA questions are Yes, then that requirement is valid. Any No answer implies further negotiation until it becomes a Yes answer. If it cannot become a Yes answer, then the need or reasonable expectation is not a valid requirement and should not be accepted as such.

Typical Organization Structures

Understanding the organizational structure(s) that exist within companies will help you manage your project and set up your project organization structure better. At this point, you define authority and accountability issues as well as control issues. There are several types of organizations, which we’ll look at next.

Hands-on 1.8: Testing Your Knowledge of Requirements

Given what you now know about the Apples and Pears project, use Table 1.18 and the RUMBA to describe and validate five requirements associated with the project.

TABLE 1.18 Requirements

Requirements	R	U	M	B	A
1.					
2.					
3.					
4.					
5.					

FUNCTIONAL ORGANIZATIONS

The first type of organizational structure is the *functional organization* (see Figure 1.1).

In this organization, the functional manager determines who will work on a project task. You already know the folks from the project charter work who will be team members; some will be full time and others will be ad hoc. In this case the project manager is typically the functional manager as well.

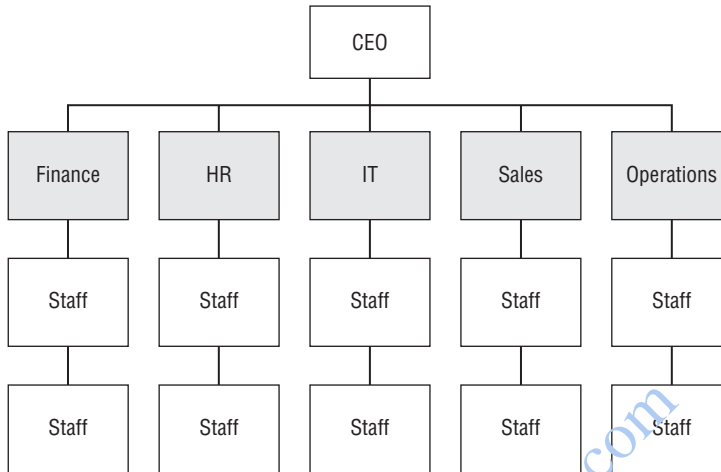
Project managers are rarely assigned, but if they are, they have little or no authority. The people assigned as project managers also have their full-time line job and have not participated in the initiation phase of the project. Their managers will coordinate activities among themselves by using their staff. Staff members do not cut across functional boundaries; their managers do that. Figure 1.1 illustrates a functional organization.

There are advantages and disadvantages of functional organizations. See Table 1.19.

TABLE 1.19 Advantages and disadvantages of functional organizations

Advantages	Disadvantages
Enduring organizational structure.	Project manager has little or no authority.
Clear career path with separation of functions, allowing specialty skills to flourish.	Multiple projects compete for limited resources and priority.
Employees have one supervisor with a clear chain of command.	Project team members are loyal to the functional manager.

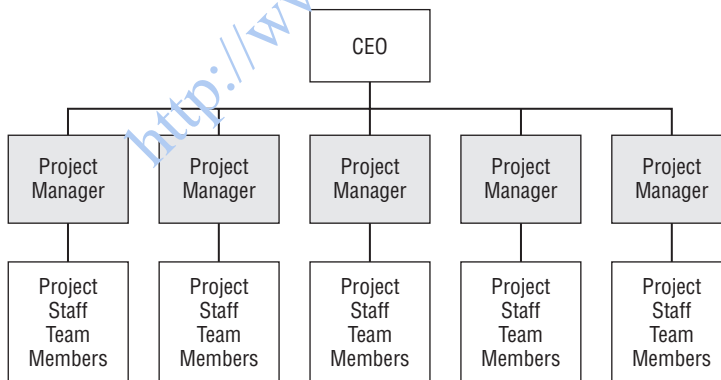
FIGURE 1.1 Functional organizational chart



PROJECTIZED ORGANIZATIONS

Projectized organizations have ultimate authority over the project. Figure 1.2 illustrates that the focus of the organization is the project. Staff for the project is focused only on projects and project work—they do not wear more than one hat. Team members are typically co-located, and loyalties are formed to the project, not to a functional manager.

FIGURE 1.2 Projectized organizational chart

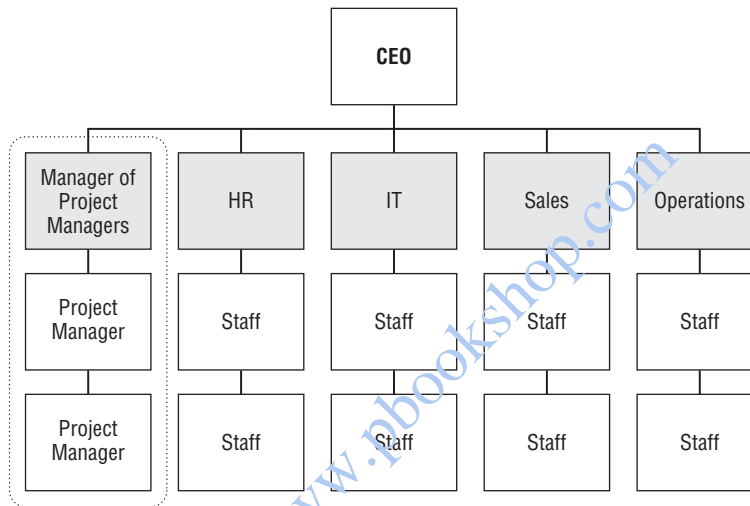


In this organization, the project manager can hire team members who are suited to the tasks. The project manager may have a set of core individuals who work on all projects (such as construction). These folks remain on the project payroll as long as their services are needed. Others are hired for a one-time-only event. These folks may be consultants, subject matter experts, and so forth.

MATRIX ORGANIZATIONS

A *strong matrix environment* is an ideal organizational structure that supports project management (see Figure 1.3). In the figure you can see a manager of project management who would be on equal footing with other managers relative to staffing and funding. In this arrangement a project management office is most likely to survive, but project management offices can reside in other organizational structures as well, even if they are not as well supported.

FIGURE 1.3 Strong matrix organizational chart



In a *weak* (Figure 1.4) or *balanced matrix* (Figure 1.5) structure, the project management work remains a stepchild to the organization within which it resides. For example, if the budget for marketing is x amount of dollars, you can be sure that only about 5% of that budget will be allocated to project management support. The balanced matrix, however, gives equal power to the project manager and functional manager.

In these organizations, the project manager may have to *negotiate* with the functional managers for a specific individual. This can be a problem as that person may not be available to work on your project. Project managers also tend to tell the functional manager how much time they have to complete tasks. The functional manager (who is often a peer) feels like the project manager is telling them how and when to do their jobs. We really don't know what functional managers have on their plate. Here's what you can do instead:

- Discuss the known task(s) with the functional manager.
- Ask how long the task will take.
- Ask for a time commitment to finish the task.

When the functional manager is approached in this way, an element of trust is achieved. They will usually become a trusted ally and send one of their direct reports to be a team member on your project.

FIGURE 1.4 Weak matrix organizational chart

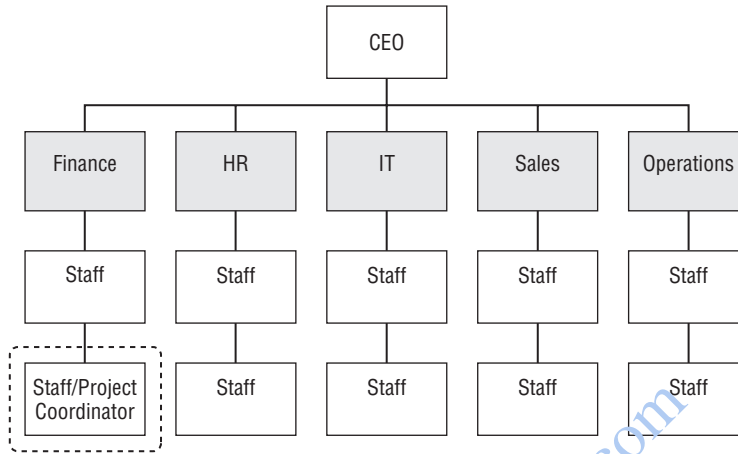
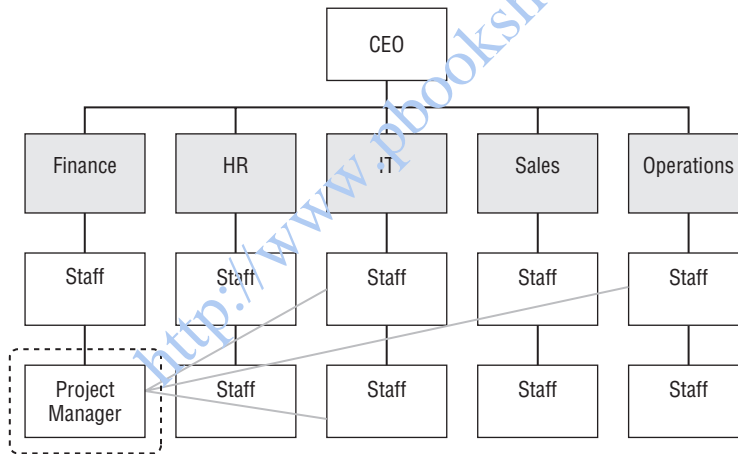


FIGURE 1.5 Balanced matrix organizational chart



The conversation may end with something like this: “I know that it’s your place to manage your workload with the folks you have available. I also know you’ll finish the task as agreed; however, I would appreciate a commitment from you that you’ll not change that resource if at all possible. If you must change the resource, please let me know as far in advance as possible. That will give me a chance to make adjustments.”

In Table 1.20 you can easily see how project management is viewed in the various organizational structures as well as the power and focus of the project manager.

Hands-on 1.9: Testing Your Knowledge of Organizational Structures

Given what you now know about organizational structures and the Apples and Pears project, answer the following questions:

1. Is Cimarron’s organization considered functional, projectized, weak matrix, strong matrix, or balanced matrix?
2. List the characteristics of Cimarron’s organization that led you to your answer in question 1.
3. Complete the organizational chart shown here in Figure 1.6 as it relates to your previous answers.

FIGURE 1.6 Sample organizational chart

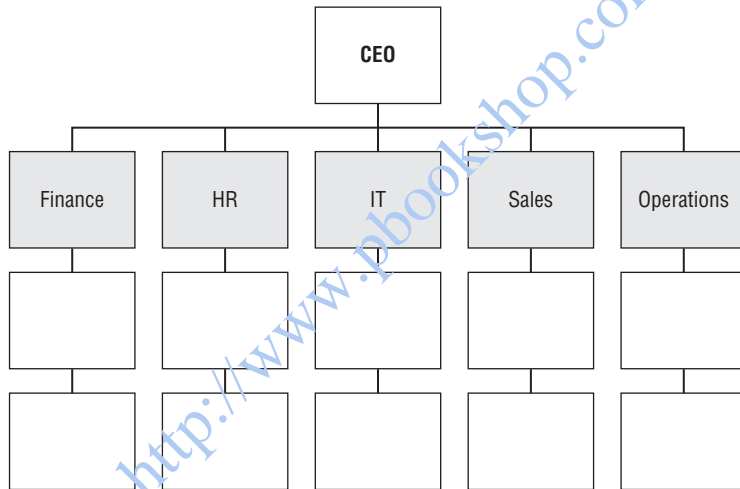


TABLE 1.20 Comparison of matrix organizational structures

	Weak matrix	Balanced matrix	Strong matrix
Project manager’s title	Project coordinator, project leader, or project expediter	Project manager	Project manager
Project manager’s focus	Split focus between project and functional responsibilities	Projects and project work	Projects and project work

TABLE 1.20 Comparison of matrix organizational structures (*continued*)

	Weak matrix	Balanced matrix	Strong matrix
Project manager's power	Minimal authority and power	Balance of authority and power	Significant authority and power
Project manager's time	Part-time on projects	Full-time on projects	Full-time on projects
Organizational style	Most like functional organization	Blend of both weak and strong matrix	Most like a projectized organization
Project Manager Reports to	Functional manager	A functional manager but shares both power and authority	Manager of project managers

Hands-on 1.10: Testing Your Knowledge of Project Scope Statements

Using Table 1.21, create the high-level Apples and Pears project scope statement with the elements known at this time:

TABLE 1.21 Scope statement template**High-Level Scope Statement Template**

Describe business goals

Describe major objectives of this project

Describe background for the project

Describe the expected benefits

List the stakeholders and their role in the project

Describe 5 high-level requirements

Describe project organization

Task 1.3: Understanding Your Stakeholders

Stakeholders are people. First and foremost, they are human beings. These folks can be an individual, a group, a community, or the like, but whatever we call them, they have an interest in your project. They may support your project with enthusiasm, or they may have serious concerns about your project.

Some people may have serious concerns but have no power to change anything in the project. Others may be highly supportive but have no rank. And the opposite is also true: Some high-ranking corporate individuals may be the champions for your project or the harbingers of doom because they do not support the project at all.

The stakeholders on your project can make or break the project. The project manager defines stakeholder assets or detriments and as a result will discover who supports your project and who does not.

You need to know who you can go to for help and support, but you especially want to know who may sabotage your project or cause you to “lose traction” as you move forward. People with high rank and high support should be leveraged fully. The project manager should create a response strategy that satisfies those with high power and no support.

In all cases it is important to listen to all the stakeholders in your project. You may learn something you didn’t understand or know. In this task you’ll discover who your stakeholders are as well as their roles and responsibilities in a project.

Scenario

Ms. Reese, with help from her project manager from Cimarron Industries, has determined that the Apples and Pears project is a favorable project to pursue. It was determined that this project will generate more revenue in the short term than upgrades to the textile mill or a remodel of existing children’s stores.

Creating clothing stores is the company’s bread and butter. Ms. Ross believes they should use the same approach they used 20 years ago when the original children’s stores were launched. Ms. Reese wants to bring in additional internal people who may have a better understanding of the more current way this type of project is handled. Ms. Ross thinks this is a waste of time but reluctantly agrees.

Ms. Reese also reminds Ms. Ross that if all goes well during this initiation phase, the planning work can be started in December and the project could be complete by the start of the next holiday season. Ms. Ross thinks that would be splendid but realizes those dates are not cast in stone until thorough planning has occurred. Ms. Reese has also prepared a list of key stakeholders and provided them to the project manager.

- Megan Holly is a marketing manager who participated in the original market study. She has a sales background and is already planning her marketing strategy.
- James Stevens is on the finance committee with Ms. Reese. He believes that even though the initial numbers looked positive, it is risky to assume that the current economy will support the increasing revenue projections for the project.

- Jacob Patrick is the manager of engineering and construction. He believes that the cost of materials is decreasing due to the slowdown in new home sales and that the project could provide many jobs during its implementation.
- Jordyn Kelly is the human resources vice president who is all for the project because it will create new jobs in many new cities.
- Skylar Janes is the advertising manager for Cimarron Industries and is eager to pursue the brand project this will create.
- Carolyn Lee is the union representative for the manufacturing facility. She represents those who will ultimately design and manufacture the clothing.
- Madison Adams is the webmaster of Cimarron's web pages. She wants to know if Apples and Pears customers will order clothing through the Internet and if so, whether adequate funding will be provided for additional servers and the like.
- Allison Jones is the IT manager and is concerned that traffic may double without adequate support systems being provided.
- Darcy Moore is the operations director for the West Coast children's stores.
- Louise Rose is the operations director for the East Coast children's stores.
- Todd Franks is a site superintendent for new stores.
- Harry Edwards is the procurement director for Cimarron.

James Stevens has agreed to be the project sponsor, even though he is still concerned about the cost and the economy. This role will give him a firsthand look at the budget and costs that are incurred.

Jocelyn Greer is a new person you met on a conference call. She is Cimarron's liaison in Europe for clothing design. She has been a clothing designer for 20 years and is up on all of the latest fashions. She will coordinate the European and stateside people who will be designing the clothing for the Apples and Pears project.

Ms. Greer is excited that the project is to include wedding and formal apparel; she will work with her partner Jeness Hopkins to design some of the apparel and search for other designs to bring into the wardrobe. Ms. Hopkins is a buyer of formal wear, and so this partnership should work out well. Ms. Hopkins and her team of buyers will be responsible for purchasing clothing that will not be made in the manufacturing plant.

Eric Nash is the manufacturing director. He will oversee the construction at the manufacturing plant of the clothing Ms. Greer and Ms. Hopkins will design.

Michelle Price will coordinate the flow between designers and manufacturing.

You believe you have identified the proper team for the project. All of your team members have a great reputation as individuals, but you know that it takes a bit of time to "synch up" as a team.

You have defined the roles and responsibilities of your team members. Now you want to create a project organizational structure that provides a visual of who the team members are and their accountabilities. You have managed many projects in the past, but have not used a formal methodology because your previous projects have been small compared to this one.

Ms. Reese named you as the project manager in the project charter. She also sent a company-wide memo announcing your position. Hopefully, this will help you gain the support of all the stakeholders.

You were a functional manager in the past, and those who reported directly to you respected you. You were able to accomplish many good things, so you are confident that you can manage this project and the people taking part in it.

Scope of Task

Duration

This task may take hours or days due to factors such as these:

- Your organization is new at formal project management.
- The availability of stakeholders.
- The roles and responsibilities have been predefined in a mature project management methodology.

Setup

None.

Caveat

For this task, you must be able to converse with senior management or others at their level.

This task also depends on the following:

- The size of the project
- The degree of uniqueness
- The degree of managerial complexity
- The degree of technical complexity
- Organizational factors

Procedure

In this task, you'll do the following:

- Identify types of projects.
- Identify and analyze project stakeholders.
- Explore the roles and responsibilities of the project sponsor, project manager, and team leaders.
- Take a look at the management and leadership skills needed in a project manager.
- Identify team members.

- Learn how to obtain team members.
- Assign responsibilities.
- Conduct a stakeholder analysis.
- Create a stakeholder map.
- Create the project organizational chart.

This task will also describe the characteristics needed to staff a project with the right people who have the right skills and are available when needed for the right duration and within the planned budget.

Details

People are the most important resource on a project! Individuals are complex, and as project manager you'll spend a great deal of time with them. You provide and receive information, overcome emotional hurdles, and provide and receive performance information in all manner of communications. First and foremost you must know and understand who these people are and their roles in the project. The stakeholders will come from different backgrounds, depending on the types of projects you're working on. Let's take a look at the types of projects you may manage someday.

Types of Projects

Different project types will dictate the appropriate stakeholders who will participate in the project. Most project managers do not have experience in all types of projects, and although it is helpful to have technical skills, the right project manager can manage many types of projects. Several types of projects seem to be common to most businesses and organizations from time to time, although this list is not all-inclusive:

Research and Development Projects These projects are often likened to programs because they typically have an element of ongoing activity and exist as long as they are funded and achieve the desired result.

Strategic Projects These projects include reorganizations, mergers, acquisitions, reengineering, or enterprise-wide initiatives such as process improvement or quality efforts.

Information Technology Projects These projects include new development, rapid application development, small and large maintenance, LAN/WAN creation, application acquisition, and the like.

Engineering and Construction Projects These projects create buildings, bridges, and roads, among other things.

Capital Improvement Projects These projects exist to upgrade internal or external infrastructures (roads, bridges, and the like) or equipment.

Product Development Projects These projects create new products and services for internal or external use based on market demand and technology advances, and often involve manufacturing efforts.

Legal Mandates or Requirements These projects can include, for example, a manufacturing facility that must comply with mandatory Environmental Protection Agency (EPA) emission standards or a legal mandate that safety equipment be updated, perhaps based on a negligence lawsuit.

External Customer Requests These projects are projects generated by customers that are not internal to your organization.

This list does not represent all types of projects—there are many more.

What Is a Stakeholder?

A stakeholder is anyone who will be impacted by or has an interest in the project. Who are these interested and involved people? The following is a list of some of the stakeholders on a project:

- Clients
- Sponsor
- Project manager
- Champion
- Performers
- Users
- Line managers
- Vendors
- Steering committee
- Support and operational staff
- Quality control staff
- Quality assurance staff

Some of the most important members of the project team are the project sponsor, project manager, and project team leaders. You need to understand their roles and responsibilities so there is no role confusion. We also will take a brief look at the leadership and management skills of a project manager.

Roles and Responsibilities of Stakeholders

Some of the most important members of the project team are the project sponsor, the project manager, and project team members. You need to understand their roles and responsibilities so there is no role confusion. We'll also take a brief look at the leadership and management skills of a project manager.

ROLES OF THE PROJECT SPONSOR

The project sponsor plays a key role and has a defined set of responsibilities within a project:

- Participates in sales efforts and contract negotiations
- Establishes and maintains top-level client relationships
- Assists the project manager in launching the project

- Participates in the project steering committee, governance board, or oversight committee to assist in setting project priorities
- Interprets company policies if necessary
- Cuts through the red tape when that is required
- Optimizes corporate objectives

The sponsor should be in constant communication with the project manager. The project manager must keep the sponsor informed of project activities. The sponsor should never find out from someone else a piece of information that they should have received from the project manager.

ROLES OF THE PROJECT MANAGER: MANAGEMENT

Most people can be taught the tools of the trade, but a project manager must possess good management skills and be able to support the following disciplines:

- Financial management and accounting
- Purchasing and procurement
- Contracts and commercial law
- Manufacturing and distribution
- Logistics and supply chain
- Strategic planning, tactical planning, and operational planning
- Organizational structures, organizational behavior, personnel administration, compensation, benefits, and career paths
- Information technology

Additionally, a project manager must have some technical skills and be able to:

- Manage the technology even if not skilled in the technology
- Communicate with technical personnel
- Use a holistic perspective
- Facilitate trade-offs
- Integrate technical, business, and human objectives
- Understand engineering tools and support methods
- Perform appropriate budgeting and estimating techniques
- Plan and organize multifunctional teams
- Understand functional policies and operating procedures

So what else is a manager looking for when they hire a project manager? Not everyone is cut out to do this work. Do you fill the bill?

- You have to have a very thick skin.
- You need to be a technical generalist (not a specialist).
- You need to be able to live without structure and rules.
- Conversely, you also need to be able to live with structure and rules.

- You can accept the fact that you'll (on occasion) have high-maintenance team members.
- You'll manage conflict on a daily basis.
- You'll have to decide whether an issue equates to the milk being left out or missing a job interview.
- You'll deal with all ranks in the hierarchy but will have no significant rank.
- You must be willing to take the heat without its breaking your heart.
- You'll smile when you see the client shaking hands with the president of your company on the company newsletter.
- You'll be an honorable mention in the last paragraph of the company newsletter.
- Expect to be on the 6 o'clock news if things go wrong.
- You are in a place of notoriety and visibility (for good or ill).
- You'll have a great sense of humor!

And remember, this is just a job—don't forget work/life balance.

Now that you know what the project manager's management roles are, let's take a look at the leadership roles of a project manager.

ROLES OF THE PROJECT MANAGER: LEADERSHIP

The project manager position is not for everyone. There is a distinct difference between management and leadership. The first female general of the U.S. Army, Brigadier General Anna Mae Hays, Chief of the Army Nurse Corps, coined the phrase, "You lead people. You manage time and things." Both are necessary, but in the project management role, quintessential leadership is the more important role.

Most project managers probably didn't tell their parents as they were growing up that they wanted to be a project manager. We landed that role in a variety of ways. You may have been asked if you wanted a "job enrichment opportunity." Of course you said yes, but in reality you knew nothing about managing projects. Thankfully, your boss saw good managerial and leadership skills in you and over time you became successful as a project manager.

Others were chosen to be a project manager because of their superior technical skills. This may sometimes be a hindrance to the project, however, as project managers focus their expertise in the technical field. It is difficult to remove your technical hat and become a generalist instead of a specialist. It takes a lot of trust that someone can do your technical job as well as you did.

Some project managers actually went to school and studied the topic, so they were prepared to be a project manager from the onset. Are you ready to take on the project management *leadership* role?

Hands-on 1.11: Testing Your Knowledge of Leadership Analysis

Table 1.22 represents key project management leadership skills. For each item, circle the number that represents your brutally honest answer. Your analysis is found in the Phase 1 Solutions section.

TABLE 1.22 Leadership analysis

Little	Some		A Great Deal		SKILL
1	2	3	4	5	1. Ability to understand and work with group dynamics
1	2	3	4	5	2. Ability to differentiate between important and unimportant issues
1	2	3	4	5	3. Ability to know when to compromise
1	2	3	4	5	4. Possess both a flexible personality and a strong determination to succeed
1	2	3	4	5	5. Ability to state case well when needed
1	2	3	4	5	6. Ability to be assertive
1	2	3	4	5	7. Want to see things through
1	2	3	4	5	8. Ability to be persuasive and not be put off by potential confrontations or arguments
1	2	3	4	5	9. Feel comfortable with self-direction and do not become frustrated with unclear delegation of authority from superiors
1	2	3	4	5	10. Ability to make fast, on-the-job decisions
1	2	3	4	5	11. Exhibit mature judgment
1	2	3	4	5	12. Ability to control costs
1	2	3	4	5	13. Ability to establish, ties, and monitor and evaluate project accountability among team members
1	2	3	4	5	14. Ability to understand major technical issues
1	2	3	4	5	15. Ability to provide feedback for productive and creative efforts
1	2	3	4	5	16. Ability to communicate upward with clients and higher management and downward with key technical managers and professionals
1	2	3	4	5	17. Ability to take strong leadership in the beginning and willingness to delegate responsibility and authority to others as the project progresses
1	2	3	4	5	18. Ability to listen, probe, and objectively evaluate information
1	2	3	4	5	19. Ability to play unfamiliar roles as a manager
1	2	3	4	5	20. Politically astute
1	2	3	4	5	21. Ability to develop effective work relationships with peers and with individuals of different ranks
1	2	3	4	5	22. Willingness to participate in problem identification, problem solving, and decision making
1	2	3	4	5	23. Willingness to use, when needed, a trial and error approach rather than a sophisticated management approach
1	2	3	4	5	24. Well skilled in negotiating processes
1	2	3	4	5	25. Ability to be a political diplomat

ROLE OF THE PROJECT TEAM LEADER

Project managers usually work within the construct of a matrix organizational structure. Functional managers, line managers, or team leaders play a vital role in the success of projects. Their role, in addition to being accountable for their operational objectives, is to support the project manager. Here are some make-or-break roles that a project manager expects from team leaders:

- Demonstrates potential for innovative and creative behavior
- Is supportive of project goals and objectives
- Remains flexible when changes are necessary
- Meets commitments for completion of deliverables
- Deals with conflicts within own area of authority
- Is results oriented
- Maintains high morale
- Communicates clearly and concisely

Identifying Team Members

So far, we have focused on key stakeholders (who become ad hoc team members). Team members are those assigned who would actually do the work.

Should you define the tasks first and then identify who will do the work? Or identify team members and decide what the work is? In reality, it's both. You inherently know who some of the team members are. You may have worked with them before on a project; some folks, such as IT, are on all of your projects because they play a key role. Because you know the high-level scope of the project, refining that scope will identify others.

How to Obtain Team Members

You want to be able to choose the best possible team members available. Sometimes you do not get to choose who will be on your team. But you'll be able to negotiate for your team members more effectively if you do the following:

- Identify the skills needed to fulfill the project goals and objectives.
- Create a brief job description for those who have the skills needed to perform various tasks.
- List the names of those you feel would best serve the project needs and why if the resource will come from internal sources.
- Determine your ground rules for accepting employees; for example, you do not wish to accept someone who has a performance problem or you don't have the budget to train someone, or they need to be on the project full or part time.
- Ask team leaders or supervisors what their ground rules are for loaning their employees; for example, employees must have sufficient time to perform their own tasks as well as the project task or they want someone to have a developmental opportunity, and the like.

Responsibility Assignment Matrix

Project managers have many things to be responsible for on a project, but what about the members of the team? The responsibility assignment matrix (RAM) is a simple tool to see at a glance who is responsible for what. Table 1.23 describes RAM terms that are frequently used. Table 1.23 shows a RAM that represents a two-dimensional relationship between personnel on the project and their level of involvement in the project.

TABLE 1.23 Description of RAM terms

Responsible	This person is usually a line manager responsible for individuals performing the work.
Accountable	An accountable party is a person or group who is liable for the outcome and having the authority to approve or reject deliverables based on acceptance criteria. This person is usually the owner of the project.
Support	A support person is usually the person performing the work. This may be an internal support person or an external vendor.
Contributor	This person is a contributor or a consultant who provides input to the project. These folks contribute expertise on an as-needed basis.
Information	This person is one who is informed of project information. This is usually the sponsor and members of the project team. Senior managers may wish to be informed if the project is highly visible.

They can be noted as responsible, accountable, provide support, must be consulted, or need to provide information, sometimes known as RASCI. Projects and the tasks within them are often complex. People want to know where they fit in the scheme of things. Many models exist for identifying the roles of individuals in a project. A popular model is the RASCI model shown in Table 1.24 and described in Table 1.23.

The RASCI model is simple. It can be made more complex by adding task numbers and a number of additional personnel titles. The RAM is a good executive overview tool enabling senior management to see at a glance what is being done and by whom.

Now that you know who these people are, you should identify key stakeholders other than the sponsor, project manager, and team leaders. You need to do this because key stakeholders can influence a project in a positive or negative way. For example, a key stakeholder is concerned about exceeding the budget. In fact, that key stakeholder may be able to cancel your project if she does not feel that the project is staying on track and within the budget.

If you know this information, you can provide the key stakeholders with a level of confidence that the project is within the budget by giving them project cash flow data, earned value information, and so forth. So how do you determine these things? You conduct a stakeholder analysis.

TABLE 1.24 RASCI model

Tasks	Project Manager	PMO	Team Members	Line Managers	Dept Manager	Sponsor	Senior Management
R	Responsible	Step 1: List the tasks.					
A	Accountable	Step 2: Show the Letters of RASCI to each task as it corresponds to the title of the person listed above.					
S	Support	Step 3: Make sure there is only one accountable individual.					
C	Consult						
I	Information						

Assigning Roles and Responsibilities

You want your team members to know exactly where they are going and which road to take to get there. In the event a team member is unclear about their role, they may take off down the wrong path (with all good intentions, of course). You are not trying to tell them *how* to perform their work—they already know that. What you do want is for each team member to have precise and unambiguous roles and responsibility assignments.

When the work is done by the right person at the right time, it helps the project manager ensure that tasks don't fall by the wayside.

Table 1.25 shows the roles and responsibilities of the various participants in the project.

TABLE 1.25 Roles and responsibilities

Team member	Role	Responsibility/accountability
Project sponsor	Takes part in all phases of the project	Ensures that the project is moving along so that the work is sufficient to actualize the project.
Project manager	Guides all processes of the project	Ensures that the project work can be successfully completed and deployed.

TABLE 1.25 Roles and responsibilities *(continued)*

Team member	Role	Responsibility/accountability
Functional (line) manager(s)	Provides estimates for work to be performed by their groups and communicates availability of the staff that will be assigned to the project	Accountable to the project manager and sponsor regarding performance of their parts of the project.
Suppliers	Plans the work to be performed by their groups and the availability of the staff that has been assigned to the project	Supplier managers are accountable to the project manager and sponsor regarding performance of their parts of the project.
Clients	Owners of the project	Have significant authority regarding scope definition and whether the project should be initiated and/or continued.
Individual contributors	Performs project work	Ensures the work is in compliance with the PM plan as well as any industry standards pertaining to their work.
Project management office	Facilitates and supports project management	Performs administrative activities, methodology coaching, training and enforcement, portfolio tracking, and so forth.
Subject matter experts	Individual performers with expertise in their process	Provides expertise as needed on either technical or business issues.
Key decision makers	Anyone with the responsibility to make major decisions regarding the project	Make major decisions regarding the project such as whether to stop the project or allow it to continue.

Hands-on 1.12: Testing Your Knowledge of Identifying Team Members

Using Table 1.26 as a model, create the Responsibility Assignment Matrix using the RASCI model for Cimarron's Apples and Pears project. Add as many rows as needed.

TABLE 1.26 RAM for Cimarron Apples and Pears project

Tasks	Project Manager	PMO	Team Members	Line Managers	Dept Manager	Sponsor	Senior Management
Project management							
Advertising							
Space planning							
Construction							
Noninventoried furnishings							
Design of clothing							
Hiring and training of personnel							
Information technology							
Manufacturing							
R	Responsible	<p>Step 1: List the tasks.</p> <p>Step 2: Use the letters of RASCI for each task as it corresponds to the title of the person listed above.</p> <p>Step 3: Make sure there is only one accountable individual.</p>					
A	Accountable						
S	Support						
C	Contributor						
I	Information						

2. Interview potential stakeholders for their interests or concerns they may have about the project.
3. Determine the stakeholder's level of power or influence.
4. Determine the impacts of stakeholders.
5. Develop strategies that will lend support to your projects from these stakeholders.
6. Create a stakeholder map.

After you brainstorm with your team and others to identify the stakeholders and have interviewed them, the next two steps are relatively simple. Developing strategies can be a little more complicated, but not so much if you did a good job with the previous steps. Table 1.28 shows four elements of the analysis.

TABLE 1.28 Stakeholder analysis template

Identify and interview potential stakeholders	Determine concern or interest	Impact assessment	Strategies to reduce challenges and gain support
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For those who have *high power and high concern*, you must get them involved in the stakeholder analysis and make a concerted effort to satisfy their concerns. Before they can be involved, you must be prepared to answer their questions. Here are a few questions that executives might have:

- What is the business need for the project?
- Why are we undertaking it now?
- What is the commercial implication?
- Do we have the right people with the right skills available to do the project?
- Will this affect our market share?
- What is the proposed schedule?
- What are the cost factors?
- Are there any special requirements?
- What would happen if we did not do this project?

For those who have *high power and no concerns*, you should keep them in the loop but not bog them down with details.

For those who have *low power but high concern*, be sure to identify those concerns, and keep them involved in the details of the project. These are the folks who are technically proficient but may not trust that you have all the details needed. They can be a detriment to your project if you ignore them. For example, they might bring up a technical issue that you are not familiar with. If you do not listen to these folks, they may stand back, watch you get in trouble, and say “Well, if you had asked me to help, I would have.” Not everyone would do this, but if only one does it, the project can be in peril.

Here are a few questions that people with low power and high concern might have:

- What is the benefit of this project to me?
- Will this project change/eliminate my job?
- Will this project change the way I do my job?
- Will this project create personal conflict for me (start of shift, overtime, day-care issues, and so forth)?

For those who have *low power and low interest*, do not send them too much information.

So now we know who the key stakeholders are: those with high power and high concern and those with low power and high concern.

The last step of the analysis is accomplished by creating a stakeholder map. This map (Figure 1.7) allows you to see at a glance how to manage your stakeholders. When creating the map, some people like to color-code the output—for instance, green for positive people plotted on the grid, yellow for neutral, and red for negative.

FIGURE 1.7 Stakeholder map

Low Concern/Interest/Support High Power Keep Satisfied	High Concern/Interest/Support High Power Manage Closely
Low Concern/Interest/Support Low Power Normal Monitoring	High Concern/Interest/Support Low Power Keep Informed

Hands-on 1.14: Testing Your Knowledge of the Stakeholder Analysis

1. Complete Table 1.29 to determine the level of power or influence, the impact assessment, and the strategy to leverage or reduce the challenges perceived by these stakeholders.

TABLE 1.29 Stakeholder analysis

Identify and Interview Potential Stakeholders	Determine Concern or Interest	Impact Assessment	Strategies to Reduce Challenges and Gain Support
Megan Holly			
James Stevens			
Jacob Patrick			
Jordyn Kelly			
Skylar Janes			
Carolyn Lee			
Madison Adams			
Allison Jones			
Darcy Moore			
Louise Rose			
Todd Franks			
Harry Edwards			

2. What are the benefits of interviewing stakeholders and conducting a stakeholder analysis?
3. What other stakeholders may be interested in your project?
4. What other information might you want to know to help understand your stakeholders?
5. How does stakeholder analysis help you to build the support you need?

Hands-on 1.15: Testing Your Knowledge of Stakeholder Mapping

Use Table 1.30 to map the stakeholders that you have analyzed.

TABLE 1.30 Stakeholder mapping exercise

Low Concern/Interest/Support High Power <p style="text-align: center;">Keep Satisfied</p>	High Concern/Interest/Support High Power <p style="text-align: center;">Manage Closely</p>
Low Concern/Interest/Support Low Power <p style="text-align: center;">Normal Monitoring</p>	High Concern/Interest/Support Low Power <p style="text-align: center;">Keep Informed</p>

Create the Project Organizational Chart

The line (or functional) manager, the product manager, the project manager, and the project sponsor are part of a *core* team. They usually participate for the duration of the project.

Primary performers working in a matrix organization have a *dotted line* relationship to the project manager; that is, as long as they are on the project, they report their work to the

project manager. The functional manager (their regular boss) assigned them to the project and still manages their administrative issues or concerns. These performers come and go as phases are completed and new work commences.

Think of functional managers as subcontractors on the project. They have their own piece of the action to fulfill as contributors to the project. A partnership should develop between project managers and functional managers because they are often peers. Having a partnership attitude makes all the stakeholders have an investment (money or otherwise) in the project, and all parties in the partnership will benefit when the project comes to fruition as planned.

So what about the steering committee and the project sponsor? Shouldn't they be at the top? If you are operating flat, they are equal members of the team. They have different accountabilities and authorities but they are "in it to win it" just like everyone else. So don't get hung up on rank. Senior managers are quite often very likable and approachable.

A project's organization is influenced by the characteristics of the project. This is not to be confused with hierarchical organizational structures such as the matrix and projectized structures we looked at earlier. However, the project organizational structure *is* created through hierarchical, organizational *relationships*. In fact, most of these relationships live in a matrix or other organizational structures.

You can build a hierarchical project structure in terms of rank, but there are benefits to building a flat structure instead. Consider managing projects on a horizontal plane—that is, there is no rank. That does not mean that everyone on the team runs the project—the project manager is accountable for the project and should be the single point of contact for all team members. The project manager simply has a different role to play than the members of the team. Everyone comes to the table with something of value to lend to the process. Having said that, be sure, as project manager, not to sit at the head of the table!

The project organizational structure must also support the skills and abilities of the staff. Some team members are provided a "developmental opportunity" that may be beyond their skills and capacities.

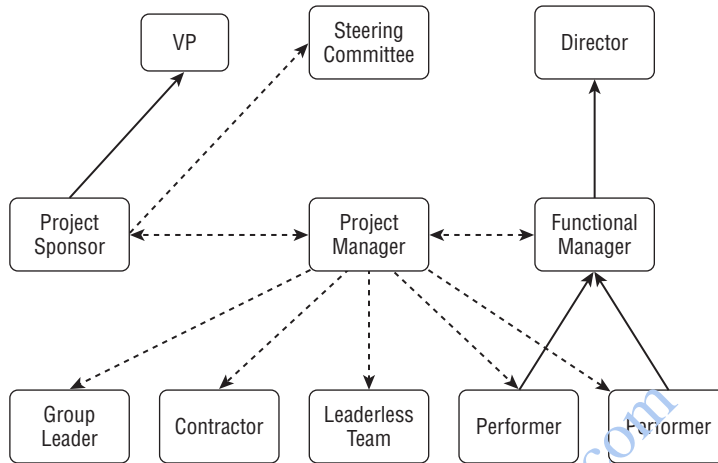
Organizational project planning facilitates communication between functional groups and project team members by defining roles and responsibilities and defines specific staffing requirements to ensure that the performers have the desired skill levels and competencies to perform project activities.

The purpose of a project organizational chart is to help communicate the reporting relationships within the project team, and to explain how the project team relates to or reports to the larger organization.

In the example shown in Figure 1.8, the project sponsor has a dotted-line relationship with the steering committee and a dotted-line relationship with the project manager, as well as directly reporting to the VP. Notice that the arrow goes both ways between the project manager and sponsor, making this a horizontal instead of a vertical, or hierarchical, relationship.

The project organizational chart maps how the project is structured and provides stakeholders with a view of who is involved in the project. It is a good idea to keep the project organizational chart up-to-date as project members come and go.

The functional managers also have a two-way dotted-line relationship with the project manager and report directly to the director. The performers report directly to functional managers but also have a dotted-line relationship with the project manager.

FIGURE 1.8 Horizontal project organizational chart

Group leaders, contractors, and leaderless teams all have a dotted-line relationship with the project manager. This type of project organizational structure facilitates teamwork and communications; an open door policy is clearly the goal.

Project Interfaces

You need to be in constant communication with your project interfaces. It is essential that each team member perform the right work at the right time in accordance with the manner needed by the project or by contractual agreement. They may be formal or informal reporting relationships, and generally fall into one of three categories:

- *Organizational interfaces* exist internally among different departments, business units, or specialized organizational units or between a company and external contractors.
- *Technical interfaces* are the formal or informal relationships that exist among various technical disciplines, such as between sales and IT.
- *Interpersonal interfaces* exist among different individuals who are working on the project.

Limiting Factors

The project manager and team will encounter factors that can limit their options in the organizational planning process. We looked at constraints earlier. If we don't address constraints, they can become hindrances to the project. Here are some examples:

- The project manager doesn't have the authority needed.
- Labor unions will dictate what work individuals may do.
- The experience level of individuals determines how closely they must be supervised.

- The people who are eventually assigned to the project may be geographically dispersed.
- Functional managers may have other demands that affect their ability to provide resources when you need them.
- The organization may have policies that restrict the use of outside contractors or temporary help.

You can overcome all of these constraints through good project communication. We'll discuss this in detail in the next task.

Hands-on 1.16: Testing Your Knowledge of Project Organizational Structures

Answers questions 1–3 and follow the instructions for item 4:

1. What challenges are associated with working in a horizontal reporting structure?
2. What are two challenges associated with managing a project within a vertical structure?
3. How can you overcome the challenges of working in a horizontal reporting structure?
4. Create a project organizational structure.

Task 1.4: Identify Project Limitations and Propose an Implementation Approach

Sometimes, especially if a project is strategic as this one is, there exists the tendency to “solve world hunger” with it. Everyone wants to jump on the bandwagon and include their pet projects. While it would be nice to include or “sneak in” a small project, it is necessary to rein in and document your project limitations. Additionally, deciding on an implementation approach will help you stay within the limitations of the project relative to budget, schedule, and scope.

Scenario

You have conducted your interviews with stakeholders and created your scope statement, but now you find that you are missing a few things. A high-level risk assessment is needed, as well as the assumptions and constraints.

Scope of Task

Duration

The duration of this task could be several hours.

Setup

There is no particular setup for this task.

Caveat

None.

Procedure

In this task you'll identify project limitations and document high-level risks, as well as assumptions and constraints based on the environment of your project using historical data, and expert advice as needed.

Detail

Describing what is not within the scope of the project will avoid confusion as the project moves along. For instance, if you'll be updating equipment for an IT unit you may decide that it includes only specific equipment and you would name other pieces of equipment that would not be changed. In other words, be very specific with your requirements and the boundaries will identify themselves. This will help you avoid conflicts as the project continues.

Project Limitations

Establishing project limitations also reduces, or in some cases, eliminates what is called scope creep. For example, if one of the requirements was to purchase accounting software, you would describe it and point out that you are not going to purchase the payroll software also because the payroll software will be outsourced.

Scope creep often occurs because customers do not really know what they want until the project is well under way. Some client changes can be added to the project as long as appropriate change control measures are followed. You have to learn how to say "no" without saying no. You can do this by saying to the customer, "I would be happy to make that change for you. It will increase the budget by \$___ and will extend the schedule until ___ and will increase risk. If you wish to approve these changes with all of the impacts I have identified for you, we can do it." Sometimes they will, but more often than not, they won't. Clients often don't realize the impacts of their requests.

Remember, if the change comes before actual work begins, then it may not be as risky as making changes in the middle of work; however, it depends on what is actually changing. For example, a change in business drivers or needs could cancel a project, or a change in infrastructure and technology could add significant cost and scope. The cost of rework downstream seems always to be greater than a correction early on, but changes are inevitable for every project.

Hands-on 1.17: Testing Your Knowledge of Project Limitations

Given what you now know about the Apples and Pears project and using Table 1.31, describe as many of the project boundaries as you can.

TABLE 1.31 Project limitations

Project Limitations

- 1.
 - 2.
 - 3.
 - 4.
 - 5.
-

Determining the Implementation Approach

A project can be implemented in several ways. Your choice depends largely on the criticality of the project, the complexity of the solution, and internal client organizations. Phased implementations are the most common. They are linear—Phase 2 cannot be started until Phase 1 is completed, and so on. Each phase may be designed to implement one department at a time.

Another type of project is often referred to as a “cutover” or “crash” project. This type of project is usually done during nonworking hours. The project “cuts” out the old system and implements the new. Training of users is essential so that the new system doesn’t seem foreign to them.

Some projects can and should be done in parallel. For example, the client organization cannot have any downtime, so an implementation strategy might be to implement the project “in the background.” Everyone is advised of a “go-live” date, and after considerable testing on that date the new project solution supplants the old one. Everything is totally transparent to the customer—which is as it should be.

Hands-on 1.18: Implementation Approaches

Given what you now know about the Apples and Pears project, describe ways you might approach the implementation for this project.

Task 1.5: Develop the Project Charter

The *project charter* is usually a short document that refers to other more detailed documents such as a “new offering request” or a “request for proposal” or any other perceived business need or client request. The project charter is a document that is created by the sponsor but is signed off by someone external to the project. In reality, you’ll prepare this document for your sponsor.

Scenario

You have conducted your interviews with stakeholders and created your scope statement, but now you find that you are missing a few things. A high-level risk assessment is needed, as well as the assumptions and constraints, scheduled milestones, configuration management, project acceptance, and approval guidelines. You are anxious to complete this part of the project so that it can be formally launched.

Scope of Task

Duration

The duration of this task could be several hours.

Setup

There is no particular setup for this task.

Caveat

None.

Procedure

For this task you’ll create the project charter, which in addition to the high-level project scope statement includes the following:

- Summary of milestones (preliminary)
- Summary of costs (preliminary)
- A description of the project’s high-level risks
- Configuration management requirements
- Environmental, organizational, and external assumptions
- Environmental, organizational, and external constraints
- Project approval requirements
- Project acceptance criteria

Estimated Budget Costs

We'll spend more time on this subject in Phase 2. For now, we are talking about high-level estimates based on what is known now. Estimated time and costs should validate the proposed high-level budget and include at least the following:

- High-level estimates for the proposed project
- Requirements for out-of-the-ordinary funding, if needed
- Ongoing costs
- Major arguments that support time and cost elements

Hands-On 1.20: Testing Your Knowledge of an Estimated Budget

Given what you now know about the Apples and Pears project, and using your common sense, list any additional costs you feel have been left out and insert them into Table 1.33.

TABLE 1.33 Estimated budget

Item	Amount

High-Level Project Risks

High-level project risks help you to decide whether the project should be approved or denied. You want to be able to answer questions that senior management may have regarding risks, such as the following:

- What is the probability of success?
- Will expectations be met?
- Is the scope statement understood by all?
- Is there a project champion for this project?
- Is there any known opposition to the project and, if so, from where?
- Is the base budget reasonable?
- Is the schedule reasonable?
- Will resources be available when needed?

- What are the assumptions and constraints for this project?
- Are there marketing risks to this project?
- Are we aware of external project dependencies?
- Do we have the capability for support after launch?

Most folks look at risks as being negative, but opportunities also exist when defining risk. Suppose you are trying to solve a problem regarding some sort of risk. Your solution not only solves the risk, but can be used in daily operations and therefore becomes an opportunity as well.

We'll discuss risk response strategies in Phase 2.

Hands-on 1.21: Testing Your Knowledge of High-Level Project Risks

Given what you now know about the Apples and Pears project, and using your common sense, list any high-level risks or opportunities at this stage of the project in Table 1.34.

TABLE 1.34 High-level risks and opportunities

High-Level Risks and Opportunities
1.
2.
3.
4.
5.

Configuration Management Requirements

This is not a subject to take lightly. In the *PMP: Project Management Professional Exam Study Guide, Deluxe Edition*, 2nd edition (Sybex, 2007), configuration management is described as consisting “of documented procedures that describe how to submit change requests and how to manage change requests. Configuration management tracks the status of change requests and defines the level of authority needed to approve changes. It describes the characteristics of the product of the project and ensures that the description is accurate and complete. Configuration management controls changes to the characteristics of an item and tracks the changes made or requested and their status.” It is especially important for IT projects and operations.

The project charter should describe briefly the change management process that will be used. (We'll discuss change management in Phases 2, 3, and 4.) It is also possible that we'll use the organization's existing process by referencing it in the project charter.

Environmental, Organizational, and External Assumptions and Constraints

False assumptions and unknown constraints can bring your project to its knees. You may think you have your bases covered, but then find you are scrambling to overcome challenges due to false assumptions and unknown constraints. Although we discussed assumptions and constraints earlier in this phase, we'll revisit them in greater detail here.

ASSUMPTIONS

Assumptions are those things that you believe are true or that you take for granted. There are many elements that you won't know about the project, so you make assumptions. You might assume that Connie in IT will be the individual who manages testing. She is the only one who knows the new test environment. Then you find out that when you need her to perform her task, she is out of the country on vacation. This assumption now becomes a risk.

You can find these assumptions by communicating with your stakeholders—all of them. Ask them to provide you with their assumptions. Document them. There will be redundancies; others believe the assumptions are also true.

If an assumption turns out not to be true, then you have a risk—maybe even a major one. Try to validate any assumptions that are unclear and be sure to test them frequently by asking, “Is this assumption still true?”

CONSTRAINTS

Constraints are limitations or barriers that may or may not be obvious at the beginning of a project. Some will surface as the project progresses. Constraints can break a project if they are not managed. Two major steps can help manage constraints:

1. Identify constraints such as time, budget, quality, schedule, technology, and directives from management, legal, political, skill sets and attitudes, and geographical perspectives.
2. Develop a response strategy for those that can be managed. For instance, if management says there is to be no overtime, allow longer durations for a task if that is appropriate. If you are dependent on external factors such as delivery of products, allow a longer lead time.

There are also enterprise environmental factors and organizational process assets that may help you define assumptions and constraints. The *PMBOK® Guide, 4th ed.*, p. 14 describes enterprise environmental factors as follows:

- Organizational or company culture and structure
- Governmental or industry standards
- Infrastructure (including IT)
- Human resources
- Personnel administration
- The organization's work authorization system
- Marketplace conditions

- Stakeholder risk tolerance
- Commercial databases (referring to industry-specific information, risk databases, and so forth)
- Project management information systems

The *PMBOK® Guide, 4th ed.*, p. 32, describes organizational process assets as follows:

- Organizational standard policies
- Guidelines, procedures, and plans
- Approaches or standards for conducting work
- Templates
- Communication requirements
- Project closure guidelines
- Financial control procedures
- Quality management procedures
- Change control procedures
- Risk control procedures
- Approval and work authorization procedures

Hands-on 1.22: Testing Your Knowledge of Project Assumptions

Given what you now know about the Apples and Pears project, use Table 1.35 to list three assumptions that you know are true and three assumptions that you are not sure about.

TABLE 1.35 Project assumptions

Project Assumptions	
1.	True
2.	True
3.	True
4.	Not Sure
5.	Not Sure
6.	Not Sure

Hands-on 1.23: Testing Your Knowledge of Project Constraints and Response Strategies

Given what you now know about the Apples and Pears project, list three constraints in Table 1.36 and determine a response strategy for them.

TABLE 1.36 Constraints and response strategies

Constraint	Response Strategy
1.	
2.	
3.	

Project Acceptance Criteria

Project acceptance criteria vary according to the type of project, but most projects follow these general acceptance criteria:

- All work has been inspected.
- All deliverables have been accepted.
- Training of staff has been completed.
- Manuals and procedures have been provided.
- As-built drawings have been received and approved.
- Items reviewed by the customer as needing to be completed before approved—also called a “punch list.”
- Supplier contracts and agreements have been closed out.
- Contractors have received final payment.

It’s important to list these criteria in the project charter so you don’t lose sight of them down the road. This will be an important element when you create your project acceptance plan.

Hands-on 1.24: Testing Your Knowledge of Putting It All Together

Just as you did for the project scope statement, fill out the template (Table 1.37) to complete the project charter.

TABLE 1.37 Project charter

The Project Charter	
Summary of Milestones	
Summary of Costs	
High-Level Risks	
Configuration Management	
Assumptions	
Constraints	
Project Approvals	
Project Acceptance Criteria	

Task 1.6: Obtain Project Charter Approval

Project approval is obtained by creating the project charter and having it approved by the signature of the sponsor or someone else in the organization who can approve the project.

Scenario

You have completed your project charter and now must obtain approval from your sponsor.

Scope of Task

Duration

The duration of this task could be several hours depending on the availability of the approver.

Setup

There is no particular setup for this task.

Caveat

None.

Procedure

This task creates project approval requirements based on the summary scorecard results.

Detail

Project approval should be aligned with the progressive business case at the *project charter scorecard* level (Table 1.38).

Remember, the project charter will be signed by someone external to the project. You need to provide the signatories with a level of confidence that those scores are valid, so be prepared to defend your project brilliantly!

Summary Scorecard

You know that you can proceed if the summary scores are at least those shown in Table 1.38. Remember, the project charter will be signed by someone external to the project.

TABLE 1.38 Project charter summary scorecard

Summary Project Charter Summary Scorecard			
	Minimum score	Actual score	Difference
Program Assessment	76		
Financials	8		
Internal Issues	33		
Alternatives and Recommendations	10		
Milestones	5		
TOTALS	132		

Hands-on 1.25: Testing Your Knowledge of Phase 1 Professional Responsibility

In Phase 0 you learned about professional responsibility and conduct. Here, and in each subsequent phase, you'll be asked questions about professional responsibility and conduct.

Answer the following questions as they pertain to Phase 1:

1. Some budget information was provided to the finance director. He calls you about the information and advises the numbers are all wrong. What do you do?
2. You can choose one of two people to be on your project team. One is highly skilled and you have worked with that person before. She is a friend of yours. The other person is equally competent but has not had the opportunity to be a member of a project team. Whom do you choose and why?
3. You have been treated very badly by one of the functional managers. They embarrassed you in front of meeting participants. What do you do?
4. Since you were appointed the project manager of the Apples and Pears project, you discovered that one of the suppliers being considered is your brother-in-law. What do you do to ensure your personal integrity and professionalism?
5. What actions do you take to promote honest interaction among team members and other stakeholders?

You obtained quite a bit of knowledge in this phase. You learned how to do the following:

- Perform project assessment
- Create a scope statement
- Identify project limitations
- Propose an implementation approach
- Develop the project charter
- Obtain project charter approval

You are now moving on to perform more detailed planning for your approved project.

Believe us when we say that it will be worth doing all of these steps. Some will be redundant (go ahead and cut and paste), but no matter how it's put together, completing the initiation phase will give new meaning to the saying, "We have bonded!" You'll be intimately involved with your project, which is where you want to be. We are not talking about micro-managing here, but being this informed will keep the meddling managers off your back because they will have a higher level of confidence that you really know what's going on and have the ball moving in the right direction.

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