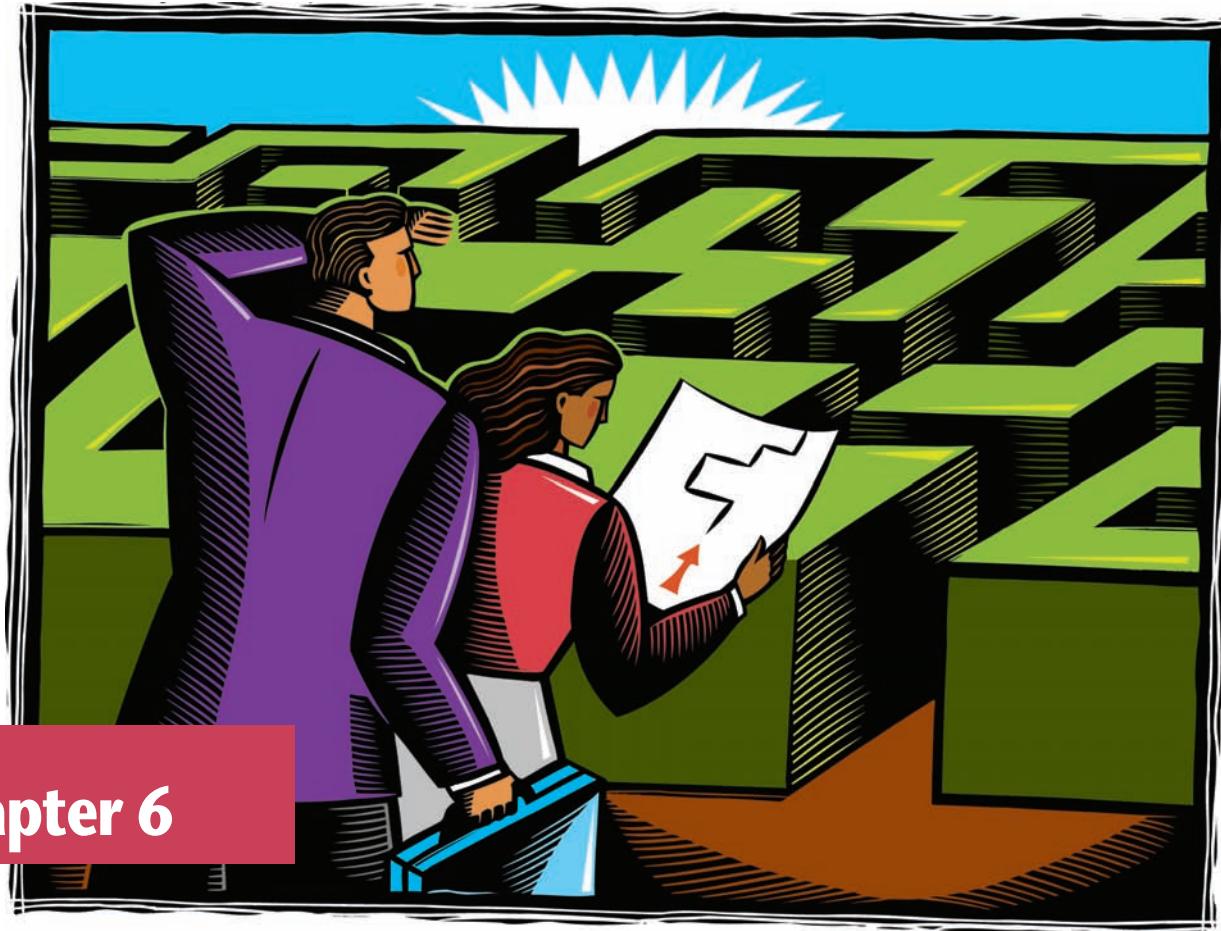


chapter 6



Long-Term Financial Activities

6.1 CAPITAL PROJECTS

6.2 CAPITAL BUDGETING PROCESS

6.3 CAPITAL PROJECT ANALYSIS

6.4 BUSINESS EXPANSION STRATEGIES

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Case STUDY

Capital Spending in New York City

Bridges and road repairs. School buildings and libraries. Buses and fire trucks. This is just a partial list of New York City's capital spending. Each year, the city spends more than \$4.5 billion for new and replacement items. In New York City, a capital project is defined as the construction, reconstruction, acquisition, or installation of a physical public improvement. The value must exceed \$35,000 and the project should have a useful life of at least five years. Some of the city's capital spending is shown below.

What \$10 Million in Capital Spending Buys

Housing	100 units of housing for the homeless mentally ill
Transit	6 high technology subway cars/25 hybrid diesel-electric buses
Sanitation	54 dual-bin recycling trucks
Fire	11 ladder trucks
Education	7 classrooms
Transportation	Resurfacing 100 lane-miles of city streets
Environment	8,000 feet of water mains (new construction)

The day-to-day operating expenses of the city are funded by taxes, *general obligation* municipal bonds, and other government revenue sources. Many capital projects are financed by another type of municipal bond, the *revenue bond*. Repayment of these bonds occurs using the revenue from the specific project, such as a toll bridge or a sports stadium. In addition, a city may receive a state, federal, or private grant to help finance capital projects that provide public benefits.

A city as large as New York will always have more needs than funding. To best serve the people, a capital budget priority process is used. The procedure starts with public hearings held by the city's 59 Community Boards. Then, various city agencies submit estimates of their capital needs. After the mayor presents the preliminary capital budget, additional public hearings are held. Next, the city council holds hearings to develop recommendations on the mayor's proposal. After revisions, the capital budget is adopted by the city council.

Think Critically

1. Describe examples of business and government capital projects in your community.
2. Conduct an Internet search to obtain information on: (a) the capital budgeting activities of governments, and (b) the current value of municipal bonds issued by New York City.

6.1

Capital Projects

Goals

- Describe types of capital projects used in business.
- Explain factors that affect capital spending decisions.

Terms

- capital project
- intellectual property

- mutually exclusive projects
- complementary projects

■ Capital Spending Activities

Each day, capital assets serve an important role in your life. The food you eat is processed with equipment. Your classes are in a school building. You may drive or ride in a motor vehicle. A **capital project** involves the construction or purchase of a long-term asset, such as buildings and equipment. These items are also called *capital expenditures*, and the process may be referred to as *capital spending*. Every organization needs and uses five main types of capital projects.

REPLACEMENT PROJECT

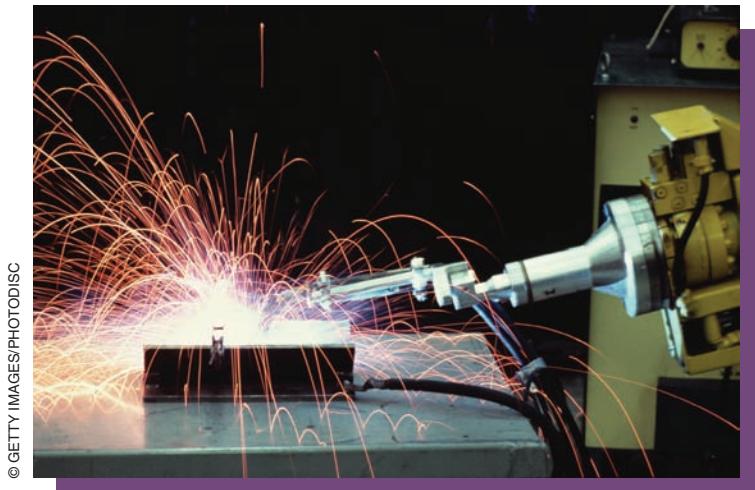
Buildings get old. Aging machinery can no longer be repaired. When capital projects wear out, companies must replace them. Failure to replace items in a timely manner can result in higher costs, lost sales, and reduced profits.



Buses are an example of a capital expenditure.

COST-SAVING PROJECT

New technology makes it possible for companies to obtain equipment that reduces operating costs. Computerized temperature controls can reduce energy bills in offices and factories. Robotics may increase production efficiency.



NEW PRODUCT OR NEW MARKET

Companies are continually attempting to expand profits through new products or new customers. When a new product is manufactured, revised or additional equipment is usually needed. This type of capital spending occurs in hopes that company sales and profits will increase.

Many of today's new products involve **intellectual property**, which are *intangible assets* used by companies. These assets commonly include trademarks, brand names, copyrights, patents, and software licensing agreements. For many businesses, intellectual properties are some of their most valuable assets. Companies such as Coca-Cola, Disney, and McDonald's depend on their famous names and characters to attract customers and sell products.

When a company decides to sell in a new market, capital spending will likely be required. New stores, office space, or factories are needed in the new geographic region.

GOVERNMENT-REQUIRED PROJECT

Every organization faces government regulations that require compliance. For example, to reduce pollutants in the air or water supply, a production company may be required to use certain equipment. To provide for employees or customers with special needs, an organization may be required to adapt doorways, stairs, or work areas.

SOCIAL BENEFIT PROJECT

Finally, a company may undertake a project not directly related to its business operations. In an effort to improve employee satisfaction, a decision might be made to build health club facilities or improve parking. Community involvement may include developing a recreational area for young people.



teamwork

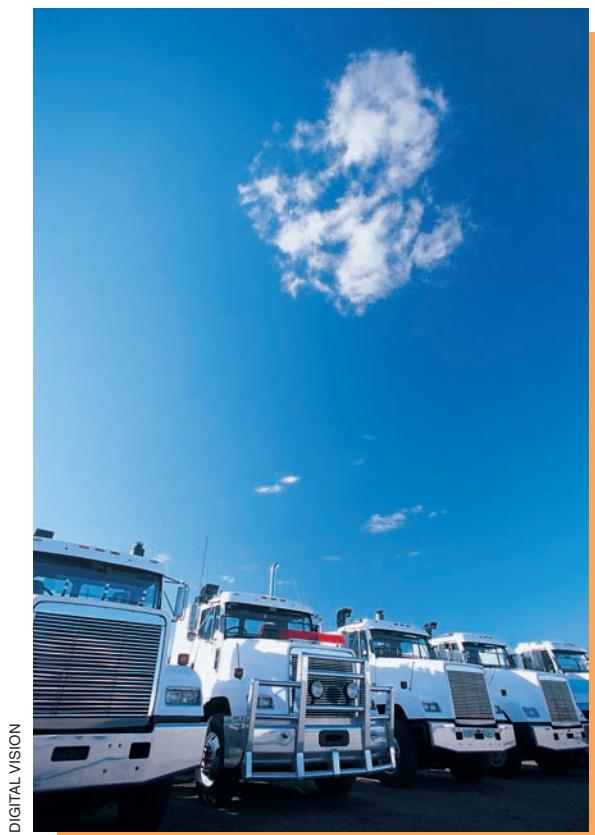
Select a company. In your team, identify an example of each type of capital project for this company.

checkpoint

Describe the five main types of capital projects.

Project Selection Factors

As a company considers certain capital projects, different circumstances may affect these choices. For example, the high cost of one project may result in rejecting several others. Selecting a certain project might create a need for other actions by the company.



The decision to buy new trucks may result in the need to build a new loading dock to accommodate them.

INDEPENDENT PROJECTS

Quite often, the capital projects being considered are *independent*, meaning that the projects are not affected by each other. However, other limitations may be present. Capital limitations are present in almost every decision-making situation. Organizations do not have unlimited funds for their capital spending activities, so choices among several projects must be made.

MUTUALLY EXCLUSIVE PROJECTS

The selection of a project can sometimes affect other choices.

Mutually exclusive projects involve situations in which the acceptance of one project does not allow acceptance of others. For example, land used for a warehouse will not be available to build additional office space. A capital decision to use factory space for manufacturing clothing will not allow this same space to be used for a food processing facility.

COMPLEMENTARY PROJECTS

The selection of one capital project can result in a need to accept another one. **Complementary projects** exist when two or more projects are dependent on one another. For example, a decision by a delivery company to buy new energy-efficient trucks may result in the need to build a new loading dock to handle the different design of the new vehicles.

checkpoint

How do mutually exclusive projects differ from complementary projects?

6.1 Lesson Assessment

UNDERSTAND CONCEPTS

Determine the best answer for each of the following questions.

1. **True or False?** Capital spending refers to payment by companies for current operating expenses.
2. Purchase of new machinery to substitute for outdated equipment is an example of a ____?____ project.
 - a. cost-saving
 - b. replacement
 - c. government-required
 - d. social benefit
3. **True or False?** Mutually exclusive projects allow a company to accept more than one project.
4. Which of the following would be complementary projects?
 - a. a delivery truck and a customer service office
 - b. a day care center and a new factory
 - c. a reconstructed bridge and highway resurfacing
 - d. updated computers and community assistance vehicles

MAKE ACADEMIC CONNECTIONS

5. **Visual Art** Create a poster or computer presentation with photos and other visuals representing the five main types of capital projects.
6. **Economics** Research capital spending to determine how this economic activity creates jobs and other economic benefits. Prepare a short written or oral summary.
7. **Law** Research government regulations that can result in a need for capital spending by companies.
8. **Environment** Observe government-required and social-benefit capital projects in your community that help the environment. What other types of capital projects could be beneficial for reducing air and water pollution?

6.2

Capital Budgeting Process

Goals

- Discuss the steps in the capital budgeting process.
- Explain factors that affect the cost of capital.

Terms

- cost of capital
- cost of debt
- cost of equity

- optimal capital structure
- weighted average cost of capital (WACC)

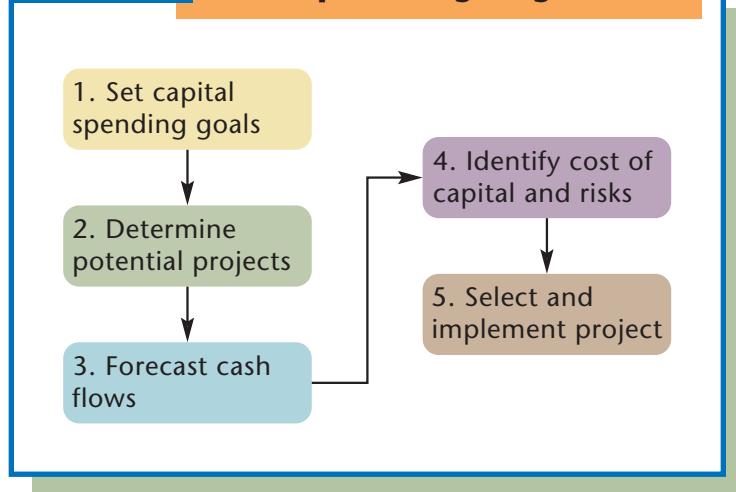
Making Capital Decisions

Capital spending, the purchase of long-term assets, is vital for the current and future success of every organization. Buildings, production equipment, computers, trucks, and machine tools are just a few of the capital items commonly used by companies.

The method for choosing capital projects is a significant task for managers. *Capital budgeting* is the process of selecting long-term assets, such as equipment and buildings. As shown in Figure 6-1, this process may be viewed in five steps.

FIGURE 6-1

The Capital Budgeting Process



1. SET CAPITAL SPENDING GOALS

The capital projects selected by a company should be influenced by organizational goals. The goals of a business may include expanding sales, reducing costs, and increasing profits. Financial theory emphasizes that the goal of a business should be to *maximize the value of the firm*. This objective is commonly measured by the market value of the company's stock. Increasing a company's market value involves both short-term profits and long-term growth. Every capital decision should increase the company's attractiveness among current owners and potential future investors.

For nonprofit organizations, capital spending goals are slightly different. For these groups, capital projects will be chosen to meet goals such as improved community services, reduced operating costs, and expanded visibility to attract additional donations.

2. DETERMINE POTENTIAL PROJECTS

After an organization's capital spending goals are clearly identified, different projects will be considered. For example, if providing customer service is a priority, spending for new computers to answer customer questions may be appropriate. If improving distribution is a necessity, a new warehouse or additional delivery trucks might be considered.

3. FORECAST CASH FLOWS

Next, managers must identify sources and estimate amounts of cash flows for the project. These income and expense items will be the basis for a quantitative project analysis. The two main sources of cash inflows are (1) additional net sales and revenues, and (2) reduced operating expenses. Lower operating expenses create a positive cash flow since money not going out is like money coming in.

When estimating cash flows, managers must be sure to consider only the *additional* amounts—those that are the direct result of the project. A company's sales may increase or expenses decrease as a result of other factors. A valid analysis must specifically identify the cash inflows and outflows that are a direct result of the capital project being considered.

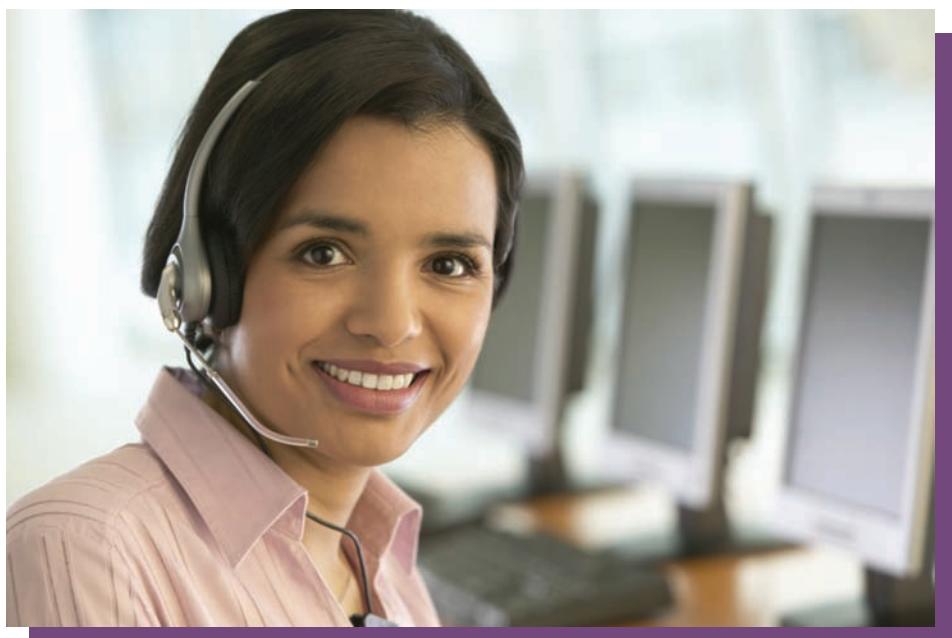
Another issue to consider when forecasting cash flows is inflation. Often, future cash flows for a project will increase each year. The real value of these amounts may actually be lower due to inflation. A manager's ability to consider inflation when estimating future cash flows is important for a valid analysis.

When forecasting cash flows, *depreciation* is not considered.

Depreciation refers to the decrease in the value of an item as a result of time and use. Even though depreciation is a business expense, it is not a cash outflow for capital budgeting purposes.

Depreciation is handled this way since it is a *non-cash* item, that is, money is not paid out when depreciation is recorded. This amount is taken into consideration as a start-up cost for a project.

DIGITAL VISION



Communication equipment or computers might be a necessary investment to improve customer service.



teamwork

In your team, discuss which step in the capital budgeting process you think would be the most challenging. Give reasons for your answers.

4. IDENTIFY COST OF CAPITAL AND RISKS

Financing the capital project is the next step a manager must consider.

Cost of capital is the interest rate used to evaluate a capital project. This percentage is often called the *discount rate*, as it is used to do present value calculations.

At this point, managers will also identify and assess potential risks. These uncertainties can range from inflation and lower consumer spending to new government regulations and natural disasters. Risk is often considered in the analysis by using a higher cost of capital. For example, the usual cost of capital for a company may be 7 percent. When evaluating a project of higher risk, using a cost of capital of 8 percent or higher may be appropriate.

5. SELECT AND IMPLEMENT PROJECT

Managers next decide which of the capital projects will be selected. This analysis will involve both quantitative elements such as cash flows and qualitative factors such as company strengths and weaknesses.

Finally, at the completion of this process, the management team puts the project into operation. The project will now require participation by a variety of people in the organization.

checkpoint

What are the steps of the capital budgeting process?

■ Cost of Capital

A significant component of capital budgeting is financing. Companies have two main sources of capital when financing their activities: debt and equity. The cost of using other people's money is an important consideration. *Cost of capital*, also called *required rate of return*, is the rate required by lenders and investors who are letting the company use their money.

COST OF DEBT

Borrowing is a common practice among organizations. Bonds, loans, and other types of debt are major funding sources. **Cost of debt** is the rate of return required by creditors. This percentage is the rate that lenders expect to receive when allowing someone to use their money. For example, an 8 percent bond issued by a company means the cost of debt is 8 percent.

Several common benefits are associated with using debt.

- The company is using the money of others, allowing the business to keep its funds available for other uses.
- The risk for creditors is lower since debts are legal obligations.
- The cost of capital is lower than other funding sources as a result of the lower risk for lenders.
- Interest payments on debt are tax deductible as a business expense.

COST OF EQUITY

The required rate of return for stockholders is not as obvious as for creditors. **Cost of equity** is the required return of the owners in a company. This amount is the percentage company owners expect to earn based on the money they have invested in the company.

For example, you might have \$100,000 invested in a company and expect the profits to be 10 percent. Any profit of less than \$10,000 would be disappointing. You might encourage the company to take a different direction. Or, you might sell your ownership in the company to another investor. Company owners (stockholders), like creditors, expect a certain rate of return. This return might be in the form of a share of the profits (dividends) or in the form of increased market value of the company.

OPTIMAL CAPITAL STRUCTURE

Some debt (with a lower cost of capital than equity) is beneficial to a company, but too much debt can result in difficulties. While the cost of debt is lower than the cost of equity, as an organization takes on more debt, its risk increases. More debt increases the likelihood of the company missing debt payments and going bankrupt. In an attempt to have an appropriate balance between the amount of debt and equity, an **optimal capital structure** is the goal. This structure is the financing combination of a low cost of capital and maximum market value.

One of the most important managerial decisions is how much debt and how much equity to use. Factors to consider include

- The current amount of the company's current debt obligations
- The company's ability to borrow additional funds or issue additional bonds
- The sensitivity of stockholders regarding the current risk of the company due to existing debt
- The past and expected future profitability of the company

WEIGHTED AVERAGE COST OF CAPITAL (WACC)

When creating the capital budget, companies develop a **weighted average cost of capital (WACC)**. The WACC is calculated by multiplying the proportions of debt and equity times the capital cost for each. For example, if a company has 30 percent debt at a cost of 8 percent and 70 percent equity at a cost of 10 percent, the WACC would be

$$\text{WACC} = \left(\frac{\text{Percent}}{\text{Debt}} \times \frac{\text{Cost of}}{\text{Debt}} \right) + \left(\frac{\text{Percent}}{\text{Equity}} \times \frac{\text{Cost of}}{\text{Equity}} \right)$$

$$\text{WACC} = (0.30 \times 0.08) + (0.70 \times 0.10)$$

$$\text{WACC} = 0.024 + 0.07 = 0.094 = 9.4\%$$

You might think that the WACC declines as a company takes on more debt. This is true, but only up to a certain portion of debt. As more debt is used,

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risk increases to create a higher cost of both debt and equity, resulting in a higher WACC.

Every organization attempts to minimize its WACC. This will occur when a certain combination of debt and equity is used. The exact combination will vary for every company and changes as risk (from increased use of debt) and interest rates change. Managers continually analyze various economic and company factors to arrive at the optimal capital structure.

checkpoint

Why is the cost of debt lower than the cost of equity?



finance in your life

Using Time Value of Money to Plan Personal Financial Goals

"My child is going to college in ten years. If I save \$4,000 a year at a 5 percent interest rate, how much will be available for his education?" This example is just one way people use time value of money calculations to reach their financial goals. For each financial planning situation, regular deposits to a savings or investment account are required. Using time value of money, you can determine the future value or the amount you should save or invest to achieve a specific goal for the future. The calculations for this situation would be as follows.

$$\$4,000 \times \text{future value of a series, 10 years, 5 percent}$$

$$\$4,000 \times 12.578 \text{ (see Appendix D)} = \$50,312$$

Saving \$4,000 a year for 10 years, earning 5 percent, results in having \$50,312.

Ben Wallace wants to have \$50,000 available over the next 10 years to help with his parents' retirement expenses. If he earns an average of 8 percent on his investments, what amount must he invest each year to achieve this goal? The calculations for this situation are as follows.

$$\$50,000 \div \text{the future value of a series of deposits, 10 years, 8 percent}$$

$$\$50,000 \div 14.487 \text{ (see Appendix D)} = \$3,452.80$$

Ben needs to invest approximately \$3,450 a year for 10 years at 8 percent to achieve his desired financial goal.

Think Critically

1. Describe other situations in which time value of money calculations could assist people with achieving their personal financial goals.
2. Identify a personal financial goal for your future. Prepare a calculation for this goal.

6.2 Lesson Assessment

UNDERSTAND CONCEPTS

Determine the best answer for each of the following questions.

1. According to financial theory, the major goal of a business organization should be
 - a. higher sales
 - b. lower customer complaints
 - c. a high market value
 - d. a low level of debt
2. **True or False?** Projects with a higher risk will usually be evaluated with a lower cost of capital.
3. A common benefit of debt is
 - a. lower risk than equity
 - b. interest payments reduce the amount of taxes
 - c. stockholders may not receive their dividends
 - d. reduced chance of company bankruptcy
4. **True or False?** If a company has no debt, its WACC would be the same as its cost of equity.

MAKE ACADEMIC CONNECTIONS

5. **Visual Art** Using photos and other visuals, create a flowchart to communicate the steps of the capital budgeting process.
6. **Communication** Interview a person who works for a nonprofit organization. Obtain information about their capital spending and the process used to analyze capital projects.
7. **Research** The cost of debt is related to bond yields. Using online or library resources, obtain current data for the rate investors are earning on corporate bonds for some companies of your choice.
8. **Communication** Talk to five people to ask them about the risks they consider when investing in stock. What were the major considerations mentioned? Were the answers from some of the people similar?

6.3

Capital Project Analysis

Goals

- Describe tools used to analyze capital projects.
- Explain factors that influence capital project decisions.

Terms

- payback method
- net present value (NPV)

- internal rate of return (IRR)
- sunk cost

Capital Decision Tools

How might a company decide which capital project to accept? Several decision-making approaches are available to guide this process.

PAYBACK METHOD

If a project that costs \$10,000 brings in \$2,500 a year, the payback is four years. The **payback method** is used to determine the how long it will take for the cash flows of a capital project to equal the original cost. In the following situation, new machinery that will reduce operating expenses costs \$42,000. With the annual amount of savings for each year shown, the payback would be five years.

Year	Cash flows
1	\$10,000
2	9,000
3	9,000
4	8,000
5	8,000

In this example, it takes until the fifth year for the total cash flows to exceed the original cost of \$42,000.

The payback method has been commonly used for many years. Managers find this method easy to use. The payback method has two drawbacks. First, payback favors short-term projects which may not be in the best interest of the company. Second, this method does not consider the *time value of money*, which is a significant financial analysis tool.

NET PRESENT VALUE

To address the major problem with the payback method, that it does not consider the time value of money, another tool was created.

Net present value (NPV) calculates the present value of cash flows for a project minus the initial investment. Three elements are necessary to use the NPV method.

1. *Initial investment* is the cost of the project, such as new equipment or a building. The initial investment is also called the *start-up cost* or the *initial outlay*.

2. *Cash flows* are the yearly amounts of increased sales or decreased costs. These funds are the financial benefits of the capital project.
3. *Cost of capital* is the interest rate the company will use to calculate the present value of the cash flows. This percentage is also called the *discount rate*.

CALCULATE NET PRESENT VALUE

Calculating net present value involves three steps.

Step 1 Calculate the present value of the cash flows using a 10 percent cost of capital.

Year 1	\$4,500
Year 2	\$4,500
Year 3	\$4,500

$\$4,500 \times$ present value of a series (see Appendix C)

$$\$4,500 \times 2.487 = \$11,192$$

Step 2 Subtract the initial cost of \$10,000 from the total in Step 1 to obtain the NPV.

$$NPV = \$11,192 - \$10,000 = \$1,192$$

Step 3 Evaluate the result. In this situation, the projected cash flows have a present value of \$11,192, which is greater than the initial cost of \$10,000. The result is a positive NPV of \$1,192.

In general, if the NPV is positive, accept the project. If the NPV is negative, reject the project. When considering several projects, accept the one with the highest NPV.

Managers should be aware of the limitations of NPV analysis. First, while the initial outlay is based on reliable costs, the projected cash flows are estimates. Accuracy of these projected figures will depend on the skill and experience of managers. Also, the cost of capital used in the analysis may change. Additional risk or increased interest rates can result in a higher cost of capital with a lower NPV.

F.Y.I.

A survey of companies indicates that the net present value method is used most often by companies to evaluate capital projects. After NPV, the internal rate of return (IRR) and the payback method are the next most popular analysis techniques.



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The start-up cost of a capital project is only one element of NPV.

INTERNAL RATE OF RETURN

Managers are often interested in the rate of return of a project. The **internal rate of return (IRR)** is the discount rate at which the net present value is zero. IRR provides decision-makers with the rate of return for a capital project. Several methods can be used to calculate IRR. First, financial calculators will likely have an IRR function key. In addition, software or online calculators are available to determine the internal rate of return. Least desirable, but sometimes necessary, is using the trial-and-error method.

A major drawback of IRR is that it reports a percentage rather than a dollar amount. One project may have an IRR of 17 percent while another is only 8 percent. The first project may only involve \$100,000 while the second is for \$1.2 million. The IRR looks more attractive for the smaller project, but the company will likely maximize its value by accepting the larger project.

checkpoint

What three decision-making tools are commonly used to evaluate capital projects?

Additional Analysis Factors

In the process of using the various methods to evaluate capital projects, some additional issues should be considered.

OPPORTUNITY COST

Whenever a decision is made to take one course of action, something else is given up. *Opportunity cost* is the value of the alternative that is given up when a decision is made. Sometimes these opportunity costs may involve items that cannot be measured in monetary value.

When a capital projects decision is being made, working capital is an example of an opportunity cost. Cash, accounts receivable, and inventory are usually required for the operation of a project. While these items are still in the company, they are not available to be used for other purposes. Since these current assets are not available for use in other ways, their value is an opportunity cost of the project.

SUNK COST

Companies may have situations in which an expense must be paid whether a project is accepted or not. For example, the cost to research a new project will occur whether or not the company decides to produce the item. A **sunk cost** is an expense that has been paid that will not affect capital decisions. These expenses may include equipment that has been purchased but that may or may not be used. Sunk costs are not considered in a capital spending analysis since the decision to accept or reject the project will not affect whether the expense will occur.

RISK ANALYSIS

Uncertainty is present in all financial decisions. These risks may be viewed from geographic, economic, social, and political perspectives.

Geography Changing weather conditions can ruin agricultural crops. A rough terrain can result in difficulties with transportation. Various geographic factors can be the basis of increased capital project risk.

Economic Conditions Higher prices, changing currency values, and low consumer spending create uncertainty. Economic risks such as inflation and changing interest rates must be considered in the capital budgeting process.

Social and Cultural Factors In one country, a certain action may be considered a bribe. In another culture, the same action may be viewed as an accepted way of doing business. Cultural differences as a result of traditions, religion, and family relations can create uncertainty when doing business in different regions. While these situations are not directly influenced by government actions, these circumstances may be viewed as *informal* trade barriers.

Political and Legal Restrictions In contrast, specific government regulations restricting certain business activities are *formal* trade barriers. Packaging laws, import taxes, and labor safety standards can affect the cost and success of a capital project. Political risk is also affected by changes in governments as a result of elections or military action.

checkpoint



How do opportunity costs and sunk costs differ?



teamwork

Describe a business situation in which a company is creating a new product. In your team, identify geographic, economic, social-cultural, and political-legal factors that could create risk for the company.



technology topics

Handheld and Online Financial Calculators for Capital Project Analysis

Financial handheld calculators (such as TI BA II and HP 12C) provide users with built-in business finance functions. The prices of these devices range from under \$30 to over \$600, depending on the complexity of calculations offered. Many managers and students use these calculators for easy computations when doing net present value (NPV) and internal rate of return (IRR) analyses.

Online calculators are also available. These web-based tools can be accessed for fast and easy analysis of capital projects. Several web sites are set up so a user can enter the data, click the calculate button, and receive the results. These online calculators may also provide a basic interpretation of the results.

Think Critically

1. Locate an online calculator for net present value (NPV) and internal rate of return (IRR).
2. Compare the benefits of handheld and web-based financial calculators.

6.3

Lesson Assessment

UNDERSTAND CONCEPTS

Determine the best answer for each of the following questions.

1. **True or False?** The payback method is common in companies due to the ease of its use.
2. The most accepted method for evaluating capital projects is
 - a. payback
 - b. net present value
 - c. internal rate of return
 - d. the risk analysis process
3. Which of the following NPV elements is most accurate because it requires the least estimating?
 - a. cash flows
 - b. start-up costs
 - c. risk
 - d. cost of capital
4. In some countries, being expected to hire family members before others would be an example of ____? ____ risk.
 - a. geographic
 - b. economic
 - c. cultural
 - d. political

MAKE ACADEMIC CONNECTIONS

5. **Communication** Select a possible capital project. Create a presentation (using photos, ads, online articles, and other visuals) to communicate the (a) initial costs, (b) cash flows, and (c) cost of capital.
6. **Culture** Talk with a person who has lived or worked in another country. Find information about capital projects in that culture. How do businesses and governments determine which projects to implement?
7. **Research** Conduct Internet or library research to obtain additional information about types of risks and how risks are analyzed for capital budgeting decisions.
8. **Geography** Locate a map for a region of the world. Describe geographic factors that could create a risk for companies doing business in that area.

6.4

Business Expansion Strategies

Goals

- Explain business growth and expansion actions.
- Identify actions for reducing global business risks.

Terms

- centralized organization
- decentralized organization
- horizontal integration

- vertical integration
- diversification
- joint venture

Business Growth Actions

Organizations continually seek out and evaluate capital decisions that will provide current profits and long-term growth. Managers make decisions that they hope will improve the company's future success.

ORGANIZATIONAL STRATEGIES

When planning for successful growth and expansion, a company must consider the structure of its organization. In a **centralized organization**, decisions are made at company headquarters. This type of structure allows for better control but may not be as flexible when adapting to local market needs around the world.



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An example of a vertical integration merger is a food processing company that buys its own farmland.



teamwork

In your team, describe situations in which centralized business activities might be preferred to a decentralized organization.

In contrast, a **decentralized organization** allows company decisions to be made at lower levels of the organization. In these companies, managers of local stores and factory supervisors in different countries have greater authority. They can make decisions about advertising and branding without consulting corporate headquarters.

EXPANSION METHODS

Often, growth of a company can be the result of a merger, for example, if a supermarket chain buys other grocery stores. **Horizontal integration** is a merger between two or more companies in the same type of business. The benefits of this situation include higher income levels as well as an ability to buy materials and supplies more efficiently, in larger quantities.

Another type of merger is **vertical integration**. In this situation, a company expands through increased involvement in different stages of production and distribution. A food processing company may buy its own farmland and obtain a shipping company. Vertical integration is especially used in developing economies where outsourcing of various business functions may not be possible.

PRODUCT VARIATIONS

Companies often grow by offering more and different products. New flavors, different package sizes, and varied brands can create business expansion. For example, in recent years new cereal products have included freeze-dried fruit and additional types of grains.

DIVERSITY OF MARKETS

Expanded business activities can also be a result of new markets. A *market* is defined as where and to whom a business sells. Business locations can grow in different regions of the country or into other countries. Geographic expansion may also occur when a company sells in a variety of areas—urban, suburban, small town, and rural. The audience of a business also may expand. Instead of just selling to younger consumers, a company may adapt its products to attract older customers.

Some companies sell only to households and individual consumers. These are referred to as B2C (business to consumer). For example, a home lawn-care service or housecleaning business would be B2C. In contrast, B2B (business to business) organizations sell to other businesses. A company that repairs buses or a business that supplies parts to an electronics manufacturer would be considered B2B. Many companies expand to cover both B2C and B2B activities. An auto repair firm may service cars for individuals (B2C) while also providing oil changes for business vehicles (B2B).

checkpoint



How does a centralized organization differ from a decentralized one?

Reducing Global Risks

Financial, economic, and other business risks are an ongoing concern for managers in every setting. These uncertainties are intensified when doing business in another country. To reduce international business risk, four actions are suggested.

CONDUCT BUSINESS IN SEVERAL REGIONS

If a company's global business activities are focused on one or two countries, the organization faces a risky situation. If political unrest or poor economic conditions occur, lower profits are likely. If a company manufactures and sells products in several regions of the world, the risk is reduced.

DIVERSIFY PRODUCT LINES

Dependency on one or two products can be risky. If demand for a company's main product declines, profits may disappear. Producing and selling a variety of items can reduce risk. **Diversification** is the offering of a variety of products or services. While this term most often refers to investing in different types of securities and industries, it is also valid for capital projects.

A diversified product portfolio may include cookies and crackers, ice cream, bottled water, cosmetics, and oral hygiene products in the same company. This portfolio of products will allow a company to balance lower sales in one division with higher sales in its other product lines.



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Conducting business in several regions reduces global risk.

F.Y.I.

Cereal Partners Worldwide (CPW) is a joint venture between General Mills and Nestlé to sell cereal in Latin America, Europe, the Middle East, and other areas of the world. General Mills brought popular cereal products such as Cheerios, Lucky Charms, and Trix into the partnership. Nestlé has an extensive distribution system and is a well-known brand in most foreign countries.

INVOLVE LOCAL OWNERSHIP

Working with a local owner can be viewed favorably by a country's government. A company that is completely owned by people from another country is viewed with more suspicion, creating greater risk.

The use of local partnerships can reduce this uncertainty. A **joint venture** is an agreement between two or more companies to share a business project. These types of arrangements between companies in different countries can contribute to business success for all parties involved.

EMPLOY LOCAL MANAGEMENT

Hiring local managers can create favorable relationships in a foreign business environment. These supervisors have knowledge of local customs and cultural business practices. A working environment involving local managers will usually reduce risk.

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What actions can be taken to reduce global business risk?



business in action

Toshiba's Production Facility in Thailand

In 2006, Toshiba, a Japanese company, announced construction of a new semiconductor production facility in the Bangkadi Industrial Park, about 35 kilometers north of Bangkok. This new facility expands the company's manufacturing capacity for semiconductors and other electronic components. With increased demand for small-signal devices in Asian markets, the company hopes to strengthen its overall profitability.

Using capital project analysis techniques, Toshiba has decided to increase production in the Bangkok factory. The initial construction of the new building was expected to take about eight months. This first phase of the multi-year building plan had an estimated cost of 2 billion yen (approximately 700 million Baht—the currency of Thailand). When completed, the new building will have a total production area of over 8,000 square meters and will employ 9,000 workers. This plant will use high-efficiency production lines to reduce manufacturing costs.

One of Toshiba's main corporate strategies involves selection of capital projects with the newest technology. This investment in Bangkok uses state-of-the-art manufacturing equipment. This capital project decision allows the company continued leadership potential in the high-growth semiconductor business around the world.

Think Critically

1. What are some of the benefits of this capital project?
2. What analysis process did the company likely use when considering this project?
3. Conduct an Internet search about Toshiba. Obtain updated information about this production facility and other company activities.

6.4 Lesson Assessment

UNDERSTAND CONCEPTS

Determine the best answer for each of the following questions.

1. A company in which decisions are made by top-level managers is a _____? _____ organization.
 - a. centralized
 - b. decentralized
 - c. horizontal
 - d. vertical
2. **True or False?** Decentralized organizations usually have managers making decisions in different geographic regions.
3. Horizontal integration allows a company to
 - a. reduce risk by selling a wide variety of products
 - b. combine with other companies in a similar business
 - c. provide local managers with decision-making authority
 - d. be involved with different stages of production and distribution
4. **True or False?** A diversified company usually has higher risk than a non-diversified organization.

MAKE ACADEMIC CONNECTIONS

5. **Visual Art** Using photos, ads, packages, labels, or other visuals, create a presentation to communicate the characteristics of (a) centralized and decentralized organizations, and (b) horizontal and vertical business activities.
6. **Law** Horizontal mergers can result in a monopoly with reduced competition and few consumer choices. Obtain information about monopolies and antitrust laws, which are designed to prevent monopolies. Prepare a short written or oral summary of your findings.
7. **Technology** Find examples of online B2C and B2B business activities. Describe the elements of these two types of business activities.
8. **Research** Using Internet or library sources, locate an example of a joint venture. Describe the partnership and explain the benefits for the companies involved.

Summary

6.1 CAPITAL PROJECTS

1. Capital spending refers to construction or purchase of a long-term asset, such as buildings and equipment. The main types of capital projects are replacement projects, cost-saving projects, new products or markets, government-required projects, and social benefit projects.
2. Independent projects are not affected by other projects. Mutually-exclusive projects involve situations in which the acceptance of one project does not allow acceptance of others. Complementary projects exist when two or more projects are dependent on one another.

6.2 CAPITAL BUDGETING PROCESS

3. The five steps of the capital budgeting process are (1) set capital spending goals, (2) determine potential projects, (3) forecast cash flows, (4) identify the cost of capital, and (5) select and implement the project.
4. Cost of capital has two elements. The cost of debt is the rate of return required by creditors. The cost of equity is the required return of the owners in a company. The optimal capital structure is the financing combination with a low cost of capital and maximum market value.

6.3 CAPITAL PROJECT ANALYSIS

5. Three main capital budgeting decision methods are commonly used: (1) the payback method, (2) net present value (NPV), and (3) internal rate of return (IRR).
6. Sunk costs are expenses that have been incurred and cannot be recovered. The risks of a capital project are commonly created by geography, economic conditions, social and cultural factors, and political and legal restrictions.

6.4 BUSINESS EXPANSION STRATEGIES

7. In centralized organizations, decisions are made at company headquarters. A decentralized organization allows business decisions to be made at lower levels of the organization. Horizontal integration is a merger between two or more companies in the same type of business. With vertical integration, a company expands through increased involvement in different stages of production and distribution.
8. Reducing global business risk may be achieved by conducting business in several regions, having a diverse product line, involving local owners, and employing local management.

Develop Your Business Language

Match the terms listed with the definitions. Some terms will not be used.

1. Discount rate at which the net present value is zero
2. Business decisions are made at lower levels of the organization
3. Acceptance of one project does not allow acceptance of others
4. Two or more projects that are dependent on one another
5. Expenses that have been incurred and cannot be recovered
6. Agreement between two or more companies to share a business project
7. Business decisions are made at company headquarters
8. Construction or purchase of a long-term asset, such as buildings and equipment
9. Intangible assets used by companies
10. Rate of return required by creditors
11. Present value of cash flows for a project minus the initial investment
12. Offering of a variety of products or services

- a. capital project
- b. centralized organization
- c. complementary projects
- d. cost of capital
- e. cost of debt
- f. cost of equity
- g. decentralized organization
- h. diversification
- i. horizontal integration
- j. intellectual property
- k. internal rate of return (IRR)
- l. joint venture
- m. mutually exclusive projects
- n. net present value (NPV)
- o. optimal capital structure
- p. payback method
- q. sunk cost
- r. vertical integration
- s. weighted average cost of capital (WACC)

Review Concepts

13. A government-required capital project would be
 - a. new machinery to lower operating costs
 - b. pollution control equipment to reduce water waste
 - c. development of a new product to sell in South America
 - d. a day care facility for the children of employees
14. The cost of capital is most influenced by
 - a. the required return of lenders and owners
 - b. the corporate tax rate
 - c. government actions to reduce pollution
 - d. competition from foreign companies
15. Which will be the lowest for a company?

a. cost of debt	c. WACC
b. cost of equity	d. cost of invested funds
16. Which of these would be considered a sunk cost?
 - a. depreciation for a currently owned building
 - b. materials for production of vehicles
 - c. electricity for the company's office
 - d. taxes owed for current profits

Think Critically

17. Piracy and counterfeiting of software, videos, and other products is a concern of many companies. How are businesses and consumers affected by this illegal activity?
18. Efforts to maximize the value of a company are considered by many to be the major financial goal of business organizations. Describe other business goals, and explain how these other goals are likely to contribute to increased company value.
19. Cash flows can result from reduced operating expenses, in which “money not going out is like money coming in.” Explain this idea and give an example of how a capital project could reduce a company’s expenses.
20. How might the capital budgeting activities of a nonprofit organization be different from the capital spending decisions of a company?
21. What guidelines would you suggest to managers when they are deciding whether to use debt or equity to finance a capital project?
22. Other than those mentioned in the chapter, what actions might a company take to reduce risk?

Business Financial Calculations

23. For the following situation, what is the payback (in years)?

Initial cost: \$1.5 million
Cash flows: Year 1 \$300,000, Year 2 \$400,000, Year 3 \$500,000, Year 4 \$400,000, Year 5 \$300,000
24. What is the net present value (NPV) for the following situation? Should this capital project be accepted? Explain your answer.

Initial cost: \$78,000
Cost of capital: 8 percent
Cash flows: Year 1 \$28,000, Year 2 \$37,000, Year 3 \$34,000
25. A company is considering a one-year investment that costs \$100,000. The investment would earn \$15,000 during that year. What is the internal rate of return on this investment?
26. In the following situation, calculate the weighted average cost of capital (WACC).

Proportion of debt: 40 percent
Cost of debt: 6 percent
Proportion of equity: 60 percent
Cost of equity: 9 percent

Analyze Cases

Use the case from the beginning of the chapter, Capital Spending in New York City, to answer the following questions.

27. What are potential difficulties faced by organizations that do not spend adequate amounts on capital projects?
28. Create a list of items that would be in the city's (a) operating budget and (b) capital budget.
29. In the 1970s, New York City was in a difficult financial situation and was unable to make debt payments on time. How would this problem affect the city's ability to sell municipal bonds? What effect would this problem have on the rate paid on the bonds?
30. Contact a local government agency to obtain information about the capital spending activities planned for the next few years.
31. If you were asked to set priorities for the capital budget of New York City, (a) describe actions you might take to decide which capital projects would be most important, and (b) suggest some capital projects that might be most important for New York City in the next few years.

Portfolio Activity

COLLECT an item that illustrates a capital project for a company or government agency. This example could be an advertisement, newspaper or magazine article, photo, or some other actual item.

CREATE a video or an in-class presentation with visuals to communicate the planning, decision-making, financing, and implementing of the capital project.

CONNECT your presentation to other aspects of our economy and society or relate the capital project to a concept you have learned in another class. Make the connection by preparing a short essay to discuss the capital project in relation to other topics.

Stock Market Activity

The stock value of a company reflects the beliefs of investors about the organization's financial decisions. The capital projects selected by managers will be the basis for current profits and long-term growth.

Use Internet and library resources to research the company you have been studying (or select a different company).

1. Describe recent capital projects of the company.
2. Explain the methods used by the company to finance its long-term operations.
3. Discuss how these capital projects may affect the stock value of the company.

Planning a Career in Capital Project Analysis



Every organization is dependent on capital assets for current operations and long-term success. Purchasing new equipment, constructing additional buildings, and buying updated computers are just some of the capital spending activities of businesses. These decisions are based on an analysis process that takes into account financial and economic factors.

In addition to businesses, the need for capital decision-making experts in government positions and with nonprofit organizations will continue to be vital.

Employment Outlook

- Overall employment for financial managers is expected to grow about as fast as the average for all occupations through 2014.
- Potential exists for expanded career opportunities in businesses with growth expectations. As companies increase their domestic and international operations, new capital projects will be considered.
- Government and nonprofit agencies will have a strong demand for capital budget experts. To serve various public needs, these agencies are likely to place a stronger emphasis on capital spending activities.

Job Titles

- Capital analyst
- Capital budget analyst
- Capital budgeting manager
- Credit risk capital analyst
- Venture capital analyst

Needed Skills

- Knowledge in the areas of finance, accounting, economics,

real estate, and risk management are fundamental for success.

- Analytical skills, computer competency, and financial forecasting modeling are necessary to plan capital spending in terms of business and economic conditions.
- Ability to work collaboratively with people in several departments within an organization, taking a team leadership role when necessary.
- Strong consideration is given to candidates with an MBA (Masters in Business Administration) and CPA (Certified Public Accountant).
- Global business activities require knowledge of cross-cultural situations and foreign economic environments.

What's It Like to Work in Capital Project Analysis?

"Today's agenda will include finalizing the capital budget, analysis of the proposed new computer system, and a decision on funding the new factory in Asia."

You might think, "That's a lot for just one meeting!" But remember, capital project work has many elements.

In addition to these work duties, you will likely be involved preparing follow-up reports about the implementation and actual costs of capital projects.

What about you? What elements of a career in capital project analysis could be of interest to you? How might you best prepare for a career in this field?



MARKETING RESEARCH EVENT

The Marketing Research Event provides an opportunity for 1–3 participants to demonstrate marketing research skills. The event consists of two major parts: the written document and the oral presentation by participants. The written document, a marketing research study, accounts for 70 points. The oral presentation accounts for the remaining 30 points of the 100 points.

Participants may use visual aids for their presentation. The oral presentation consists of 10 minutes for participants to explain the project followed by 5 minutes for the judge's questions. Participants are to assume the role of management trainee. They have been asked by the business manager of a major stock brokerage firm (the judge) to develop a promotional campaign. Participants will conduct the necessary market research and develop a promotional campaign for the firm's customer service offerings. The judge will evaluate the presentation, focusing on the effectiveness of public speaking and presentation skills and how well the participants respond to questions that the judge may ask following the presentation.

Participants will choose a stock brokerage/investment company and describe the business's current customer service offerings. The business's customer service offerings must then be compared to services offered by the competition. Participants will design and conduct a marketing research study to determine preferred customer service offerings. Based on the comparison and research, the participants will identify new customer service offerings for the business. Then the participants will develop a promotional campaign to promote the business's proposed customer service offerings.

Performance Indicators Evaluated

- Identify the business's customer service offerings.
- Design a marketing research study to determine the clientele's customer service preferences.
- Conduct the market research.
- Compare customer service offerings.
- Recommend improvements for customer service offerings.
- Prepare a promotional campaign to promote the business's proposed customer service offerings based on the market research.
- Present the research findings and proposed promotional campaign to the business's manager in a role-play situation.

Go to the DECA web site for more detailed information.

Think Critically

1. Why is it important for a company to know what the competition offers for customer service?
2. Why is accurate marketing research so important?
3. What is the advantage of a company using a third party to conduct research and make recommendations?
4. What incentives can be used to encourage customers to participate in a marketing research survey?