chapter



Project Selection and Prioritization

After completing this chapter, each student should be able to:

- Describe the strategic planning process.
- Describe the portfolio alignment process.
- Itemize strengths and weaknesses of using financial and scoring models to select projects.
- Describe how to select and prioritize projects as an outgrowth of strategic planning.
- Given organizational priorities and several projects, demonstrate how to select and prioritize projects using a scoring model.
- Determine who should identify potential projects in an organization.

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analysis can be very illuminating and can suggest direction for an organization. An example of SWOT analysis for the Built Green Home at Suncadia is shown in Exhibit 2.3. (The Built Green Home at Suncadia, Washington, was developed using advanced sustainability concepts and a large degree of stakeholder involvement. A much more detailed description of this house appears at the end of Chapter 5.)

E	xhibit 2.3	SWOT Analysis for the	e Built Green Home at Suncadia
	5	Strengths	Weaknesses
	Green building has	s a buzz	Green building has not reached mainstream
	Seattle has a stror support	ng green building community	Limited project resources community
	Strong community	support	Distance away from Seattle
	Growth in green by that demonstrate v	uilding projects /alue	Green building is perceived to be costly
	Need to provide nu Committed develo	umbers on green building value per and builder	High cost of green projects
	Ор	portunities	Threats
	Uniqueness of pro Location Community surrou Lack of data on gr	duct nding house een building (wealth) value	Existing thinking on green building and its niche focus Building schedule Community (location) Rumors
	Source: Brenda Nu	unes, Developer, BuiltGreen Home	e @ Suncadia.

Guiding Principles

Once the SWOT analysis is complete, the organization's leadership should establish guiding principles such as the vision and mission. Some organizations break this step into more parts by adding separate statements concerning purpose and/or values. Often, these sections are included in the mission. For simplicity's sake, they will be treated as part of the mission in this book. It is more important to understand the intent of each portion and achieve it rather than worry about the exact format or names of individual portions.

Vision

The vision should present a "vivid description of a preferred future."¹ It should be both inspiring and guiding, describing the organization as it can be in the future, but stated in present tense. A clear and compelling vision will help all members and all stakeholders of an organization understand and desire to achieve it. Visions often require extra effort to achieve, but are considered to be worth the effort. Visions are often multiyear goals that once achieved suggest the need for a new vision.

One of the most often cited visions, because it was so clear and compelling, was President John F. Kennedy's goal of placing a man on the moon before the end of the 1960s. Kennedy set this goal after Russia launched Sputnik and the United States found itself behind in the space race. His vision was very effective in mobilizing people to achieve it.

Mission Statement

The vision should lead into the mission statement, which is a way to achieve the vision. The mission statement includes the "organization's purpose, beliefs, core values, culture,"² primary business, and primary customers. Several of these sections may flow together in the mission statement and, sometimes, an overall statement is formed with expanded definitions of portions for illustration. The rationale for including each section (either as one unified statement or as separate statements) is described as follows:

- By including the organization's purpose, the mission statement communicates why the organization exists.
- By including beliefs, a mission statement communicates the ideals for which its leaders and members are expected to stand. Beliefs are deeply held and slow to change, so it is quite useful to recognize them as they can either help or hinder an organization's attempt to achieve its vision.
- By including the organization's core values, a mission statement communicates how decisions will be made and the way people will be treated. True organizational values describe deeply held views concerning how everyone should act—especially when adhering to those values is difficult.
- By including the organization's culture, the mission statement instructs members to act in the desired manner.
- By including the primary business areas, everyone will know in what business the organization wishes to engage.
- By identifying the primary customers, everyone will understand which groups of people need to be satisfied and who is counting on the organization. The mission needs to be specific enough in describing the business areas and customers to set direction, but not so specific that the organization lacks imagination. An example of a vision and mission statement from Cincinnati Children's Hospital Medical Center is shown in Exhibit 2.4.



Strategic Objectives

With the strategic analysis, mission, and vision in place, leaders turn to setting strategic objectives, which should support the mission and vision. For most organizations, this strategic objective setting occurs annually, but some organizations may review objectives and make minor revisions in three- or six-month intervals. While the planning is normally performed annually, many of the strategic objectives identified will take well over one year to achieve. The objectives describe both short- and long-term results that are desired along with measures to determine achievement. These objectives should provide focus on decisions regarding which projects to select and how to prioritize them since they are an expression of the organizational focus. Many writers have stated that for objectives to be effective, they should be "SMART—that is specific, measurable, achievable, results-based, and time-specific."³ An example of strategic objectives from Midland Insurance Company is shown in Exhibit 2.5.

Flow-Down Objectives

Once an organization's strategic objectives are identified, they must be enforced. Some objectives may be implemented by work in ongoing operations. However, projects tend to be the primary method for implementing many objectives. If the organization is relatively small, the leaders may proceed directly to selecting projects at this point. Larger organizations may elect a different route. If the organization is so large that it is impractical for the overall leaders to make all project selection decisions, they might delegate those decisions to various divisions or functions with the stipulation that the decisions should be aligned with all of the organization is small and the top leaders make all project selection decisions or whether the organization is large and some of the decisions are cascaded one or more levels down, several methods of project selection may be used.



2.2 Portfolio Alignment

Companies that carefully align projects with their organizational goals will find they tend to be more successful at completing their projects and deriving the expected benefits from them. Project success at these companies is measured by how much the project contributes to the organization's objectives as well as the traditional measures of staying within budget and schedule and achieving the specific technical goals promised at the start of the project.

This project portfolio alignment is very similar to financial portfolio alignment from a company's perspective. In a financial portfolio, efforts are made to diversify investments as a means of limiting risk. However, every investment is selected with the hope that it will yield a positive return. The returns on each investment are evaluated individually, and the entire portfolio is evaluated as a whole.

Because projects are frequently performed in a fast-paced environment, it is helpful if they can be guided by organizational priorities. Some of the most typical reasons for project failure are:

- not enough resources,
- not enough time,
- unclear expectations,
- changes to the project, and
- disagreement about expectations.

The first step in overcoming these problems is to carefully align potential projects with the parent organization's goals. While many companies are motivated to align projects with organizational goals for these benefits, an additional reason for companies that sell to the government is that the U.S. Federal Office of Management and Budget in 2003 mandated that "federal agencies show that IT projects align with top-level goals for government efficiency and service."⁴ This was the introduction of the Sarbanes-Oxley requirements. All publicly traded companies must now follow certain guidelines that require some sort of financial decision model to be made in deciding to do a project.

A project portfolio is a collection of projects grouped so they can be collectively managed. A project portfolio is similar to the set of classes a student takes in a given term. Each class contributes toward degree requirements. Most students will choose to

take a mix of some easy and some hard classes rather than all hard classes at the same time. In the same way, all projects in a portfolio are selected to contribute toward the organization's goals, and a mix of some high-risk high-reward projects and some easy projects is normal.

When managers assess the organization's ability to perform projects and then identify, select, and prioritize a portfolio of projects and other work that they believe will help the organization achieve its strategic goals, they are performing portfolio alignment. Portfolio alignment helps an organization achieve its goals by "removing duplicated project efforts, ironing out inconsistencies between project scopes, and improving the mix and scheduling of projects."⁵ While the majority of the portfolio alignment activities may be conducted by a team of senior executives, project managers should understand how their specific projects are aligned with the organization's objectives since they will need to either make or provide input on many decisions.

In times when the economy is poor, many companies struggle to get enough business. In such an environment, some firms might accept almost any work they can get. Even during bleak economic times, however, one should be careful how internal projects are selected since selecting one project limits resources (money, people, etc.) available to other projects. During good or bad economic times, people should take the same care with external projects—ensure that they are consistent with the organization's goals.

Assessing an Organization's Ability to Perform Projects

Assessing an organization's strengths and weaknesses is an essential part of aligning projects with the organization; if an organization does not have the right capabilities, a project that may otherwise support organizational goals may be too difficult to successfully complete. Some questions to ask regarding a firm's ability to support projects are as follows:

- Do we have a teamwork attitude, free and open communication, creativity, and empowered decision making?
- Do we have a clearly defined project management process?
- Do our associates have the right attitudes, skills, and competencies to use the project management process?
- Are our leaders at each level willing to take appropriate personal risk?
- Does senior leadership establish a strong leadership foundation?
- Do individuals and teams exhibit leadership at their respective levels?
- Do we monitor and understand our external environment?

Identifying Potential Projects

The second part of aligning projects with the firm's goals is to identify potential projects. Ideally, this is accomplished in a systematic manner—not just by chance. Some opportunities will present themselves to you. Other good opportunities will need to be discovered. All parts of the organization should be involved. This means people at all levels from front-line workers to senior executives and people from all functional areas need to help identify potential projects. For example, salespeople can uncover many opportunities by maintaining open discussions with existing and potential customers, and operations staff may identify potential productivity-enhancing projects. Everyone in the firm should be

aware of industry trends. Many industries have trade journals such as *Elevator World* or *Aviation Week and Space Technology* that can be read regularly for potential project ideas. One reasonable goal is to identify approximately twice as many potential projects as the organization has time and resources to perform. Under close examination, some potential projects may not be a good fit. Any company that accepts practically every potential project will probably waste some of its resources on projects that do not support its organizational goals.

Once potential projects are identified, the next step is to develop a brief description of each. The leadership team that will select and prioritize projects needs to understand the nature of the projects they are considering. While the level of documentation different firms require varies greatly, a bare minimum can be called the "elevator speech." This is when a person meets another waiting for an elevator and asks "I hear you are on XYZ Project. What is it all about?" The responder may have only a brief time to give a reply before the elevator arrives and must be prepared to answer quickly with simple statements about the scope of the project work and why it is important to the organization. If the firm uses financial justification as part of project selection, an estimate of costs and benefits may also be required.

Methods for Selecting Projects

The people in charge of selecting projects need to ensure overall organizational priorities are understood, agreed upon, and communicated. Once this common understanding is in place, it is much easier to prioritize potential projects. The degree of formality used in selecting projects varies widely. In a small company, it can be straightforward. The prioritization should include asking questions such as these.

- What value does each potential project bring to the organization?
- Are the demands of performing each project understood?
- Are the resources needed to perform the project available?
- Is there enthusiastic support both from external customers and from one or more internal champions?
- Which projects will best help the organization achieve its goals?

There are several different methods of systematically selecting projects. The methods include both financial and scoring models. The primary reason for including financial analysis either to make the project selection decisions directly or to at least assist in the decision making is that from management's perspective, projects are investments. Therefore, proper selection should yield a portfolio of projects that collectively contribute to organizational success.

Three different approaches are commonly used to ensure both financial and nonfinancial factors are considered when selecting projects. First, some organizations use financial analysis as the primary means of determining which projects are selected and management merely tempers this with informal inclusion of nonfinancial factors. Second, some organizations use financial models as screening devices to qualify projects or even just to offer perspective; qualified projects then go through a selection process using a scoring model. Third, at still other organizations, financial justification is one factor used in a multifactor scoring model. The common thread in all three of these approaches is that both financial and nonfinancial factors are considered when selecting projects. Let us consider both financial and scoring models. Financial models will be covered in concept, but the calculations will not be shown since they are explained in depth in most required finance courses. Scoring models will be covered in both concept and calculation since many students might not have them in another course.

Using a Financial Model to Select Projects

Financial models generally compare expected project costs to expected project benefits. Several financial models can be used in making project selection decisions.

Net Present Value (NPV)

Net present value (NPV) is the most widely accepted model and will be covered first. When using net present value, one would first discount the expected future value of both the project costs and benefits, recognizing that a dollar in the future is worth less than a dollar today. Then the analyst would subtract the stream of discounted project costs from the stream of discounted project benefits. The result is the net present value of the potential project. If the net present value is positive, then the organization can expect to make money from the project. Higher net present values predict higher profits. See the summary in Exhibit 2.6.

Benefit-Cost Ratio (BCR)

A second financial model sometimes used is benefit-cost ratio (BCR). The ratio is obtained by dividing the cash flow by the initial cash outlay. A ratio above 1.0 means the project expects to make a profit, and a higher ratio than 1.0 is better.

Internal Rate of Return (IRR)

The third financial model is internal rate of return (IRR). In this model, one calculates the percentage return expected on the project investment. A ratio above the current cost of capital is considered positive, and a higher expected return is more favorable.

Payback Period (PP)

The fourth financial model that is sometimes used is the payback period (PP). In this analysis, a person calculates how many years would be required to pay back the initial project investment. The organization would normally have a stated period that projects should be paid back within, and shorter payback periods are more desirable.

bit 2.6 F	inancial Models for I	Project Selection			
	Net Present Value (NPV)	Benefit-Cost Ratio (BCR)	Internal Rate of Return (IRR)	Payback Period (PP)	
Calculation	PV revenue – PV cost	Cash flow/Project investment	Percentage return on project investment	Project costs/ Annual cash flows	
Neutral Resu	NPV = \$0	Ratio = 1.0	IRR = Cost of capital	Payback period = Accepted length	
If used to screen projects or to select project outright	NPV > Acceptable amount D	Ratio > Acceptable amount	IRR > Acceptable amount	Payback period < Acceptable length	
If used to compare projects	Higher NPV better	Higher ratio better	Higher IRR better	Shorter payback period better	

Advantages and Disadvantages of Each Method

Financial models are useful in ensuring that selected projects make sense from a cost and return perspective. Several models have weaknesses that need to be understood before they are used. For example, payback period models do not consider the amount of profit that may be generated after the costs are paid. Thus, two projects with a similar payback period could look equal, but if one has substantially higher revenue after the payback period, it would clearly be superior. Benefit-cost ratio would not be acceptable unless all costs and benefits were calculated in present dollars (in which case it is similar to NPV except it is a ratio of benefits to cost instead of the difference between revenue and cost). Internal rate of return and benefit-cost ratios have problems if used for choosing between mutually exclusive projects because they can favor smaller projects that create less total value for the firm but have high percentage returns. For example, a huge project with a medium rate of return would create a lot of value for a firm but might not be picked over a smaller project with a higher return if only one can be chosen. Additionally, it is sometimes quite difficult to calculate an internal rate of return if a project has nonconventional cash flows. For the most part, the finance field recommends using net present value. The other measures can be calculated to provide perspective on whether a project passes a minimum financial return threshold or to communicate with people that might not understand NPV.

However, none of the financial models ensure alignment with an organization's strategic goals. Therefore, financial analysis, while very useful, is normally not enough. Decision makers need to also consider how well a project fits according to additional factors. They will often use a scoring model for this purpose. Sometimes, a scoring model used in this fashion is called a project selection and prioritization matrix.

Using a Scoring Model to Select Projects

In addition to ensuring that selected projects make sense financially, other criteria often need to be considered. A tool called a scoring model helps to select and prioritize potential projects. It is useful whenever there are multiple projects and several criteria to be considered.

Identifying Potential Criteria

These criteria should include how well each potential project fits with the organization's strategic planning. The criteria may also include such items as risk, timing, resources needed, etc. A normal practice is for the company's leadership team to jointly determine what criteria will be used to select projects. Midland Insurance Company uses the three objectives of profit, growth, and people as shown in Exhibit 2.5. A list of questions executives may use to develop their list of criteria is shown in Exhibit 2.7.

Exhibit 2.7	Examples of Project Selection Criteria	
How well does th How many custo How competitive What unique adv Does the compar What is the proba What is the expe	his project fit with at least one organizational objective? mers are there for the expected results? ly can the company price the project results? antages will this project provide? hy have the resources needed? ability of success? cted return on investment?	

Determining Mandatory Criteria

Once the leadership team agrees on a list of criteria that are important, the next step is to determine whether any of the criteria are mandatory. That is, are there any situations that dictate a project must be chosen regardless of any other considerations? Examples of this include government mandates and clear safety or security situations. This list of "must do" projects should be kept as small as possible since these projects automatically get selected and can crowd out other worthwhile projects.

Weighting Criteria

Next, the leadership team determines the relative importance or weight of each decision criteria. While more complex methods of determining criteria weights and project evaluations have been used in the past, many firms now use the simple methods described here for determining criteria weights. See Exhibit 2.8 for an example of project evaluations. First, executives determine which criterion is most important and give that a weight of 10. Then, they ask how important in comparison each of the other criteria is. For example, if the executives in a consumer products company thought development of new products was considered to be most important, it would be assigned a weight of 10. If the customer relations factor was deemed almost as important as new product development, maybe it would be assigned 8. If the factors of supplier relations and probability of project success were each deemed to be half as important as new product development, each would be assigned 5. Perhaps other criteria such as cost reduction, safety, etc., were also considered, but determined to not be as important. The resulting criteria with weights are shown in Exhibit 2.8 in the top row of the selection and prioritization matrix. Most organizations will decide to use about three to five criteria. Lesser-rated criteria can be used as tie breakers if needed.

Evaluating Projects Based on Criteria

Now the leadership team evaluates each project on each criterion. The most efficient and accurate method is to concentrate on one criterion at a time, going down each column in turn. An easy method for this is to rate each project on that particular criterion with scores ranging from 1 (potential project has very little or even negative impact on this

Exhibit 2.8 Project Selection and Prioritization Matrix									
	Project\Crite & Weight	ria	New Products 10	Customer relations 8	Supplier relations 5	Success probability 5	Weighted Total Score		
	Project A								
	Project B								
	Project C								
	Project D								

criterion) to 5 (project has excellent impact on this criterion). The upper left portion of each cell in the matrix can display the rating, representing how well that project satisfies that criteria.

Once a project has been rated on a particular criteria, that rating should be multiplied by the weight assigned to that criteria and displayed as the weighted score in the main body of each cell. The total for each project should be added across the row. The highest scoring projects would ordinarily be selected. If several projects have close scores (virtual ties), either other criteria or discussion can be used to break the tie. For example, in Exhibit 2.9, there is a virtual tie between Projects A and B.

Sensitivity Analyses

Scoring models allow leadership teams to perform "sensitivity analyses"—that is, to examine what would happen to the decision if factors going into it were to change. Selection criteria may be added or altered. Participants may decide that some criteria are more important than others and weight them accordingly. Missing criteria or new alternatives can be added and the decision revisited. For example, if the executive team evaluating the projects in Exhibit 2.9 had a bad experience with an unsuccessful project and decided to reevaluate their decisions with success probability now weighted a "9" for very important, the new project selection and priority matrix would be calculated as shown in Exhibit 2.10.

Decision makers can ensure that they use very solid ratings for each potential project. For example, if one criterion was the number of customers, the marketing department could interview some potential customers to gauge their level of interest.

A company might want to select several projects. If so, the scores from the selection matrix could serve as one method of prioritizing the projects.

Prioritizing Projects

Once all projects have been selected, they will need to be prioritized—that is, the decision makers will need to determine which ones will get assigned resources and be scheduled to begin first. If a company selects a number of projects for a year (or even for a fiscal quarter), it cannot possibly expect to start all of them at the same time. The scoring models are very useful in providing input into the starting order of projects. Most leadership teams

oit 2.9 Co	omp	oleted	Pro	oject So	ele	ction	and	Priorit	ization M
Project\Criteria & Weight	P	New roducts 10	Ci	ustomer elations 8	S re	upplier lations 5	e pi	Success obability 5	Weighted Total Score
Ducie et A	5		3		4		5		
Project A	50		24		20		25		119
Durin et D	4		3		5		5		
Project B		40		24		25		25	114
	1		5		3		3		
Project C		10		40		15		15	80
	2		4		1		2		
Project D		20		32		5		10	67

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hibit 2.10 Revised Project Selection and Prioritization Matrix										
Project\Criter & Weight	ia I	New Products 10	Ci	Customer relations 8		Supplier relations 5		Success robability 9	Weighted Total Score	
Project A			3		4		5			
		50		24		20		45	139	
			3		5		5			
FIUJECLE		40		24		25		45	134	
Broject C	1		5		3		3			
Project C		10		40		15		27	92	
Project D			4		1		2			
		20		32		5		18	75	

will consider the weighted scores of each project as a starting point in assigning resources to projects and determining their start dates. The leadership team members, however, also generally discuss other issues such as:

- the urgency of each project,
- the cost of delaying the expected benefits from various projects, and
- practical details concerning the timing.

For example, an important process improvement project may be far less disruptive to perform when the factory is shut down for routine maintenance. One more discussion frequently occurs in the prioritizing process—that is, if there is a conflict between resource needs for two projects—which one gets the needed resources first? Often, this is left to the project sponsors to iron out; for especially important projects, it may be formally decided by the leadership team. In that way, the probability of the critical project being held up by a misunderstanding is greatly decreased.

2.3 Securing Projects

The discussion above pertains to projects that are internal to an organization. This section deals with projects a company (called the client) wants performed, but may hire external resources (called the contractor) to execute significant parts or all of the work. External projects can be viewed either from the perspective of the client company that wants the project to be executed or from the perspective of the contractor company that wants to perform the work. Client companies may first put prospective external projects through a selection and prioritization process as described above and, if selected, then decide whether to perform the work internally (make) or hire the project to be performed by others (buy). If the decision is to buy, then the client company has several work processes to perform including the following:

- plan purchasing and acquisitions,
- plan contracting,
- request seller responses, and
- select sellers.

Contractor companies need to identify potential project opportunities, determine which they will pursue, submit proposals, and be prepared to either bid or negotiate to secure the work. We will consider the client company's perspective in Chapter 12, Project Supply Chain Management. We will consider the contractor's perspective next.

Identify Potential Project Opportunities

Contractors seeking external projects to perform should pursue this in a fashion similar to that of any company considering internal projects as described in the portfolio alignment section on identifying potential projects earlier in this chapter. Additionally, since they need to look externally, contractor companies should have representatives at trade shows, professional conferences, and anywhere information on the intentions of potential customers and competitors may surface. Contractor companies should also actively practice customer relationship management by establishing and nurturing personal contacts at various levels and functions. Contractor companies can also practice customer relationship management by linking information systems to the extent practical so as to identify any useful information concerning potential future projects and improve management of current projects.

Determine Which Opportunities to Pursue

Just as all companies should decide which internal projects to select as previously described in the methods for selecting projects, most contractor companies are best served in targeting the projects they wish to pursue. Some companies have a policy that they will bid on every potential project knowing that if they do not bid, they will not be awarded the project. More companies find that if they target their opportunities, their "hit rate" or probability of securing the work on any given proposal increases. It takes time and resources to put together a good proposal, so it makes sense to increase the acceptance rate.



Each company has strengths and weaknesses versus its competitors. Hence, a quick SWOT analysis could be used to decide whether to pursue a potential project just as a more involved version of SWOT analysis was described earlier and depicted in Exhibit 2.3. Decision makers can also ask how well a potential project will help achieve their objectives. If they determine a project will help achieve their objectives, the next considerations are the cost to pursue the work and the probability of successfully securing the project given the likely competition. Finally, does the company have the capability to perform the work if it is awarded?

Prepare and Submit Project Proposal

When a firm prepares to submit a proposal, it is really conducting a small project with the primary deliverable of the project being a proposal. The contractor should understand the criteria the client will use to decide to whom they will award the project. While criteria will vary extensively from one project to another, generally three main areas will be considered—technical, management, and financial factors. In other words, a client will likely want to be convinced that the potential contractor is technically, managerially, and financially competent. Successful project managers try very hard to convince potential clients that they are capable on all three dimensions. A short list of these factors is shown in Exhibit 2.11.

Many companies find that targeting their opportunities is a better use of their time and resources than bidding on every potential project.

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<i>chibit</i> 2.11 Technical, Management, and Financial Factors in Contractor Selection										
Technical		Management	Financial							
Technical experien	се	Management experience	Financial capacity							
Problem statement and analysis Recommended solutions Alternative solutions		oblem statement and Project charter alysis								
		Deliverables list	Cost summary by work group							
		ernative solutions Milestone schedule								
Scope and limitations	s of work	Cost escalation								
Method of approach		thod of approach Project tracking and control system								

Negotiate to Secure the Project

Once all proposals have been delivered and evaluated, the client company may elect to either award the project or enter into negotiations with one or more potential contractors. On more routine projects, the contract may be awarded at this point. Further clarifications and negotiations may follow for complex projects.

A client company and a contractor company may negotiate the amount of money to be paid for a project. They may also negotiate the contractual terms, schedule, specific personnel to be assigned to work on the contract, quality standards, reporting mechanisms, and various other items. A project manager may need to make arrangements with potential suppliers to secure the products and services needed to perform the project. All of these considerations will be covered in subsequent chapters.

Successful project managers understand that they need to prepare well for negotiations. This would start with a clear understanding of what is most important to their management. Often, it includes fact-finding with the client company to understand its needs and abilities. Armed with understanding of both perspectives, a project manager attempts to find a solution that allows them to secure the project work with enough profit potential and with the start of a good working relationship with their client. In the end, the client company will select the contractor(s) and award the contract(s).

Summary

Project selection does not occur in isolation. Ideally, it begins with the organization's strategic planning. This planning begins with a strategic analysis of the organization's internal strengths and weaknesses as well as the external threats and opportunities it faces. The organization should then develop its guiding principles such as mission and vision statements. Most companies will have an annual planning session in which strategic objectives are developed. Larger organizations will continue this effort with one or more levels of planning in which the overall objectives are flowed down to determine objectives that are appropriate for each organizational level.

Once the strategic planning is accomplished, the organization's leadership team engages in portfolio

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alignment. The first part of the organizational alignment is an open and honest assessment of the organization's ability to perform projects. The decision makers need to understand how many resources are available, the organization's overall capabilities, and the capabilities of the individuals who will be assigned to projects. An ongoing portfolio alignment activity is for everyone in the firm to identify possible opportunities that they feel might help the organization achieve its goals. Each potential project should be described at least by stating in a sentence or two what work is involved and how it would help the organization achieve one or more of its goals.

Once potential projects are identified and briefly described, they should be put through a process to determine which will be selected and what their relative priorities are. Both financial and scoring models are frequently used to evaluate potential projects. Net present value is the preferred financial method, although others are sometimes used. Financial analysis tells the leadership team how much each potential project is worth from a benefits-versus-cost comparison, but does not tell how each potential project may help to achieve the organization's goals. Scoring models can incorporate various goals and should also be used. Once a project list is selected, the projects need to be prioritized so some can start right away and others can start later.

Contractor companies need to be constantly on the lookout for potential project opportunities. Once potential projects are identified, companies need to decide which ones they pursue. Just as for internal projects, some external projects will be better at helping an organization reach its goals because they are a better fit. The contractor needs to prepare and submit proposals for desired projects and be prepared to follow up and often negotiate in order to secure them.

Chapter Review Questions

- **1.** List and describe each step in the strategic planning process.
- 2. Why are multiple criteria project selection models preferred?
- 3. What happens to a project proposal that does not meet a "must" objective in a project selection system?
- **4.** What does the strategic analysis acronym SWOT stand for?
- **5.** Which parts of SWOT are internal? Which parts are external?
- **6.** What are some examples of guiding principles an organization's leaders might develop after they have completed strategic analysis?
- **7.** In what tense should a vision be written?
- **8.** Name at least four things a mission statement should include.
- **9.** Why should a mission statement be neither too specific nor not specific enough?

Discussion Questions

1. Describe how to prioritize projects to ensure top management involvement.

- **10.** In addition to short- and long-term results, what should strategic objectives include?
- **11.** What does the acronym SMART mean with regard to goals?
- **12.** What is the primary method of implementing organizational objectives?
- **13.** What is the first step in avoiding common reasons for project failure?
- **14.** Who should be involved in the second part of aligning projects with the firm's goals, which is identifying potential projects?
- **15.** How many potential projects should be identified in comparison to how many the organization plans to actually implement? Why?
- **16.** What is the most common financial analysis technique used in project selection? Why?
- **17.** Which type of financial model would you normally use in project selection? Why?
 - Describe all of the issues management must consider when determining priorities of projects.

- **3.** Tell why gaining top management support is vital to project success.
- **4.** List and describe the steps in strategic direction setting.
- Describe how to conduct each portion of a SWOT analysis.
- **6.** Describe what knowledge is gained from each portion of a SWOT analysis and how it helps project managers.
- **7.** Describe the interaction between vision and mission statements.

- **8.** List and describe the steps in prioritizing projects with a scoring model. Why are they performed in this order?
- Describe advantages and disadvantages of financial and scoring models in project selection.
- **10.** Describe three different ways decision makers might select projects while considering both financial and nonfinancial factors.

Exercises

1

 Complete the following scoring model. Show all your work. Tell which project you would pick first, second, third, and last. How confident are you with each choice? If you lack confidence regarding any of your choices, what would you prefer to do about it?

Project\ Criteria & Weight	Criteria 1 10	Criteria 2 6	Criteria 3 4	Weighted Total Score
Project A	4	3	5	
Project B	3	2	3	
Project C	2	4	3	
Project D	1	3	4	

1

2. Complete the following scoring model. Show all your work. Tell which project you would pick first, second, third, and last. How confident are you with each choice? If you lack confidence regarding any of your choices, what would you prefer to do about it?

Example Project

Your instructor will probably bring example projects to class and facilitate the assignment of students to the various project teams. Therefore, you will probably not

Project\ Criteria 1 **Criteria 2 Criteria 3 Criteria &** Weighted Weight 10 7 3 **Total Score** 1 3 4 Project A 3 5 3 Project B 5 4 3 Project C 2 3 1 Project D

- **3.** Pretend you are on the leadership team for a pharmaceutical company that is in a difficult financial situation due to patents that have expired on two of your most profitable drugs. Brainstorm a list of criteria by which you would select and prioritize projects. Weight the criteria.
- **4.** Pretend you are on the leadership team of a manufacturing company that is currently challenged by low-cost competition. Brainstorm a list of criteria by which you would select and prioritize projects. Weight the criteria.

be involved in the project selection. However, one of the first things you should do when assigned to a project is to learn about the company or other organization that

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wants the project to be completed. Why did they select this project? Is it a "must do" project or did it get picked over other competing projects? By understanding what makes the project so important, you will make better decisions and will be more motivated through the term. If your project is a "must do" project, explain why. If it is not a "must do" project, explain how it was selected. Explain where it fits in priority with other work of the organization.

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Project Management in action

PRIORITIZING PROJECTS AT D. D. WILLIAMSON

One primary task that leaders need to perform at least once per year is to determine which potential projects will best use their company's resources. Of the many potential projects, what is the proper portfolio that can accomplish their organization's goals and objectives? This is how one company made these decisions.

D. D. Williamson uses an Outlook database to keep track of much of its project and daily work. It first separated out the daily work and listed 78 projects. These projects were prioritized during a ³/₄-day session. First, the criteria were established for prioritizing the projects. Second, the criteria were weighted. Third, the list of projects was refined. Finally, each project was rated on each criterion, and the weighted ratings were totaled.

The first activity, establishing the selection criteria, had two purposes. First, a meaningful list needed to be established that could be used to prioritize the projects in a manner consistent with the corporate objectives. Second, the entire global operating team needed to be engaged so they would feel they "owned" both the criteria and the resulting decisions. To that end, a net touch technique was used. Each member wrote one criterion on each of three different Post-it Notes that in his/her opinion was very important. This yielded 21 criteria from the seven-member team. Then, the criteria were posted on a white board, and the members grouped similar items. Finally, the team decided on title names for the related groups of criteria.

The second activity was to weight (or determine the relative importance of) each criterion. If this were not done, all criteria would basically be considered equally important, which is rarely true. The team was asked to first agree on the most important criterion and give that a score of 10. The team decided that two criteria were equally important—bottom line results and safety of associates. Once these were assigned a 10, the team considered each of the other criteria in comparison. The other weights assigned ranged from a high of 7 to a low of 2. The team decided to use the six criteria that had weights of 5 or more and keep the lower-weighted criteria in reserve for use as possible tiebreakers later.

Now the leadership team reconsidered the list of projects. They waited until the criteria were in place so that no person would be tempted to manipulate the criteria in favor of a "pet" project. The first question asked in refining the list was meant to determine which projects were unique to one location and which would contribute to multiple locations. The answer indicated whether a proposed project was actually five separate projects that were considerably different at each location or was really one project that would be implemented in multiple locations. Several projects such as the accounting department's effort to close the books in three business days at the end of each quarter were determined to be one project with a few local implementation issues. Once these projects were listed as single projects, the list of 78 projects became a smaller list of less than 40. However, many other efforts had not been formally listed as projects previously. Once these were discussed and some were added, the refined list became 62 projects to consider.

The first consideration here was to determine if any of the projects were "must do" projects. It was determined that three of the projects had to be accomplished under any circumstances. These were put at the top of the list. All of the other projects then went through a process to determine their relative importance.

All seven members of the global operating team rated how well each project satisfied each of the chosen six weighted criteria. They did this one criterion at a time. They also made sure they "anchored" the scale for the sake of consistency. They used a simple fivepoint scale with 5 being best on that criterion and 1 being worst. Each team member first looked at the list

of 62 potential projects and selected the ones that he or she thought were clear "5's" (projects that were in the top 20 percent or so on that criterion) and clear "1's" (projects that were in the bottom 20 percent or so). This took only a few minutes. Then they projected the list of projects on a screen so that they could look at an entire page of about 15 projects at once. They first asked for consensus on which projects were either "5's" or "1's." Generally, there was consensus on a few projects and disagreement on quite a few others. On the first pass, only the 5's or 1's on which everyone agreed were recorded. This let the team quickly agree on the projects that were best or worst on that criterion. Once those had been determined, each project was systematically considered. The team members were asked to vote for each with a thumb up for 5, thumb horizontal for 3, and thumb down for 1. If six of the seven members agreed, the score was recorded. If the vote was split 5 versus 2 or 4 versus 3, the in-between score of 2 or 4 was assigned. If there were extreme votes of both 1 and 5, the differences were quickly discussed. Often, one person either knew or interpreted something differently and a quick explanation allowed the team to reach agreement. When a major disagreement still existed, a compromise score was assigned and the score was highlighted for possible discussion later. Since there were 62 projects and 6 criteria on which to rate each of them, lengthy discussion on one specific issue needed to be tabled until later.

As the team rated each project, an online scribe recorded the results on a spreadsheet that was projected. This spreadsheet also contained the weights for each criterion, so the weighted scores were calculated. When subsequent criteria were under consideration, the columns for the already-decided criteria were hidden so they would not be a distraction.

In the end, the team had a prioritized list of 62 projects. For the next meeting, they planned to assign resources to the projects starting with those at the top of the list. Once resources run out, other projects will not be started. Their intent was to be able to start projects in three triads per year with most of the projects taking about three months or less to complete. Projects that will take considerably longer should be planned in phases so the first phase can be completed in three or four months, during which time the next phase can be planned.