

***Contemporary Project Management 4th edition
Kloppenborg Solutions Manual***

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CHAPTER 2

Project Selection and Prioritization

LEARNING OBJECTIVES

This chapter presents a broad introduction to project management. After completing this chapter, each student should be able to perform the following:

Core Objectives

- Explain in your own words the strategic planning and portfolio management processes.
- Describe how to select, prioritize, and resource projects as an outgrowth of strategic planning.
- From a contractor's viewpoint, describe how to secure projects.

Technical Objectives

- Compare the strengths and weaknesses of using financial and scoring models to select projects.
- Given organizational priorities and several projects, demonstrate how to select and prioritize projects using a scoring model.

Behavioral Objectives

- Explain the strengths an organization might possess that could improve its ability to perform projects.

TEACHING STRATEGIES

- Generally, the first thing we do in this chapter is ask the students about their example projects. Most of the student teams will not have met with their sponsors yet. We encourage them to do so as soon as possible. We ask them to tell us why the agency or organization selected this particular project. Often they are not aware. We use that uncertainty as the basis for this chapter.
- Remind the students that while the concepts behind many project management techniques are the same for all organizations, the mechanics of how they are performed can vary widely. Project selection, for example, can be very simple in a small organization or highly structured in a larger organization. Nevertheless, all organizations should use the idea of starting with strategic planning, identifying potential projects, using appropriate criteria, and choosing the set of projects that help the organization best to achieve its goals. In practice, however, some organizations decide one project at a time without looking at the big picture.
- Tell the students that in many cases they may have limited involvement in project selection and prioritization decisions, but those decisions will have a major impact on their projects, so they need to understand both how the decisions were made and the rationale behind them.
- One topic that lends itself to a quick breakout session is SWOT analysis. We like to give a scenario for a local government organization, sports organization, or company that is in the news and challenge the students to brainstorm a few strengths, weaknesses, opportunities, and threats. We ask each team to report on one of those four areas. We

then ask the students how this knowledge can help them decide which projects they want to pursue. This introduces the concept of multiple criteria decision-making.

- Next we introduce the mission statements for both our university and our college of business. We ask the students what they can tell us about the mission or vision statements for their present organizations (Many of our MBA students work full time and many of our undergraduates work part time.). We then discuss how this knowledge can be helpful in selecting projects that will help achieve the vision and mission. Often, students do not claim to know their organizational vision and mission. We encourage them to find those statements and try to understand how they should guide behavior.
- Show Exhibits 2.5 through 2.8 to get students thinking about what a portfolio really means. We relate a project portfolio for an organization to a personal financial portfolio since most students have had finance and can remember diversifying. Either to follow-on one of the earlier breakouts, or as a standalone breakout, ask students to brainstorm potential projects of each type shown in Exhibit 2.8 for a particular company or other organization. You can even use your own university.
- Since our entrepreneurship majors need to take project management, we remind them that a vast majority of work in young organizations is project based.
- Quickly present Exhibit 2.8 to emphasize that net present value (NPV) is the most commonly used financial model in project selection, but that other methods are available.
- For another breakout, give a scenario faced by an organization (real or fictitious). Ask students to first brainstorm potential criteria for selecting projects in that situation. The students then weight the projects on each criterion. When they report out, ask them to give the rationale behind their decisions.
- Ask the students to use a scoring model to select and prioritize projects. Demonstrate with Exhibits 2.10, 2.11 and 2.12. Exercise 1 or 2 could be used for this breakout. Alternatively, with some prior setup of generating several possible projects, a continuation of the scenario of the local organization described in the previous bullet could be used to add authenticity. Yet another alternative is to have the students in groups select a type of car to buy. They will need to decide on the selection criteria first.
- We like to point out Exhibit 2.13 (Alternative Breaks Project Site Selection). Emphasize both how this is an example of selecting projects based upon multiple criteria and that we will have numerous places throughout the course where we will demonstrate points with this same integrated project.
- If your course emphasis is on preparing students for the PMP and/or CAPM exam, be sure to emphasize the study tips.
- You might choose to use either Suburban Homes Construction Project (to create a scoring model to select from the six alternatives) and/or Casa de Paz Development Project (to create an elevator pitch) as in-class workshops or homework assignments.

LECTURE AND WORKSHOP OUTLINE

2.1 Strategic planning process

The company's leadership performs strategic planning to set direction.
Strategic analysis

Internal and external analysis using SWOT.

Guiding principles

Vision (preferred future state) and mission (what we stand for and how we will operate) statements, perhaps purpose and values also.

Strategic objectives

Annual goals to help achieve vision and mission.

Flow-down objectives

In larger organizations an expansion on strategic objectives.

2.2 Portfolio management

Since projects are investments, we must ensure the best set of projects is selected.

Portfolio

A collection of projects or programs and other work that are grouped together to facilitate effective management of that work to meet strategic business objectives.

Program

A group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually.

Subproject

A smaller portion of the overall project created when a project is subdivided into more manageable components or pieces.

Assess organization's ability to perform projects

Understanding the type and amount of projects the organization can successfully perform.

Identify potential projects

Systematically and entrepreneurially by everyone in the organization.

Methods for project selection

Based upon organizational priorities, including financial and other considerations.

Using a cost-benefit analysis model to select projects

Comparing expected project costs with benefits often by using net present value analysis.

Using a scoring model to select projects

Used when multiple criteria such as timing, risk, and resource needs are important in selection decisions.

Prioritizing projects

Once selected, determining when each project will start and how conflicts will be resolved.

Resourcing projects

After the priorities of each project has been determined, leaders should start assigning resources from the highest priority project down until resource availability limits additional projects.

2.3 Securing projects

Client company perspective of finding contractors to perform and contractor company perspective of finding projects to perform.

Identify potential project opportunities

Contractor companies use many methods to uncover possible projects.

Determine which opportunities to pursue

Decide whether to pursue all projects or only select projects.

Prepare and submit project proposal

Proposals often include technical, management, and financial considerations.

Negotiate to secure the project

Both parties need to agree to terms that make sense.

CHAPTER REVIEW QUESTIONS – SUGGESTED ANSWERS

1. List and describe each step in the strategic planning process (objective #1, pp.33-37)
 - Strategic analysis – analyze strengths and weaknesses within the organization and opportunities and threats external to the organization.
 - Guiding principles – create statements of organizational vision, mission, purpose and/or values to guide decision-making.
 - Strategic objectives – often annual planning to establish short and long term results that will support guiding principles.
 - Flow-down objectives – optional for large or complex organizations to ensure that appropriate goals are established.
 - Portfolio alignment – selecting a set of projects to support organizations' goals.
2. Name at least four things a mission statement should include. (objective #1, pp.35-36)

The mission statement should include the organization's purpose, beliefs, core values, culture, primary business, and primary customers.
3. What does the strategic analysis acronym SWOT stand for? (objective #6, p.35)

Strengths, weaknesses, opportunities, and threats.
4. What is the most widely accepted financial model for selecting projects? (objective #4, p. 44)

Net present value (NPV) is the most widely accepted model as all the other models, though offering additional perspective, have more weaknesses.
5. What are some advantages and disadvantages of using a financial model for selecting projects? (objective #4, pp.44-45)

Financial models are useful in ensuring that selected projects make sense from a cost and return perspective, but they do not take into account a company's strategic goals, so objectives, timing, resource needs, and risk should often be considered also.
6. What are some advantages and disadvantages of using a scoring model for selecting projects? (objective #5, pp.45-48)

Scoring models allow leadership teams to perform sensitivity analyses—that is, to examine what would happen to the decision if factors affecting it were to change. They are more time-intensive than financial models.

7. What are some common reasons for project failure? (objective #6, p.33)

- Not enough resources
- Not enough time
- Unclear expectations
- Changes to the project
- Disagreement about expectations

8. Who should be involved in the second part of aligning projects with the firm's goals, which is identifying potential projects? (objective #2, p.42)

All parts of the organization should help identify potential projects.

9. If there is a conflict between resource needs for two projects, who decides which one gets the needed resources first? (objective #2, p.48)

Generally this is determined by the project sponsor; under especially important circumstances, the decision may require the leadership team.

10. In a project scoring model, why is each decision criteria given a weight? (objective #5, p.46)

The weights are assigned according to each criterion's relative importance. Therefore, the more important criteria will have a greater effect on the outcome than criteria deemed less important.

11. What purpose do sensitivity analyses serve in using scoring models to choose projects? (objective #2, p.47)

Allows decision makers to examine what would happen to the decision if factors affecting it were to change.

12. If several projects have close scores as the result of a scoring model, what can be done to break the virtual tie? (objective #5, p.47)

The group can use other criteria or discussion to break a tie.

13. Why might a contractor company perform a SWOT analysis prior to bidding on a potential project? (objective #3, p.50)

A quick SWOT analysis could be used to decide whether to pursue a potential project. 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. A company frequently considers risks both of pursuing and not pursuing a potential project. Finally, does the company have the capability to perform the work if it is awarded?

14. Why is it important for a contractor to understand the source selection criteria a client uses to decide to whom they will award a project? (objective #3, p.51)

By understanding what a client is looking for, a contractor can demonstrate his company's capabilities in terms of the specific job proposed, thus increasing his chances of being selected for the work.

15. Name five things that may be negotiated between a client company and a contractor company. (objective #3, p.51)

- Amount of money to be paid
- Contractual terms
- Schedule
- Personnel
- Quality Standards
- Reporting Mechanisms

DISCUSSION QUESTIONS – SUGGESTED ANSWERS

1. How might the internal and external parts of a SWOT analysis affect one another? (objective #1, Analyzing, pp. 34-35)

The internal analysis (elements within the project team's control) consists of asking what strengths and weaknesses the organization possesses in itself. The external analysis (elements over which the project team has little or no control) consists of asking what opportunities and threats are posed by competitors, suppliers, customers, regulatory agencies, technologies, and so on. Together, these two can give a company an idea of what its competitive advantage is relative to others in the market and where they should go from here.

2. Describe the interaction between vision and mission statements. (objective #1, Applying, pp. 34-36)

The vision is normally a description of a desired future state of the organization that may take multiple years of effort to achieve. The mission statement should evolve from the vision and be a means to achieve it.

3. How is a company's portfolio similar to and different from a financial portfolio? (objective #1, Evaluating, 37-39)

A portfolio is "projects, programs, subportfolios, and operations managed as a group to achieve strategic business objectives." Project portfolios are similar to financial portfolios. 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.

4. What is the best way for an organization to prioritize among selected projects? Does it vary among organizations? (objective #2, Analyzing, p. 48)

There are several ways to prioritize among selected projects, and the method(s) used may vary from organization to organization. If using a scoring model, further discussion and/or additional criteria can be used to prioritize among projects with similar scores. Executives may have pet projects, despite the scoring model results. And sometimes a single consideration (such as timing the debut of a new system) outweigh other criteria and lead to project prioritization.

5. Why is aligning potential projects with the parent organization's goals the first step in avoiding project failure? (objective #3, Analyzing, p. 39)

Aligning potential projects with the parent organization's goals makes it far likelier that a project will receive support from company decision makers. This buy-in or good will can greatly impact the likelihood of a project succeeding.

6. Why is it good practice for organizations to identify twice as many potential projects as they plan to implement? (objective #5, understanding, p. 42)

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.

7. Suppose you are purchasing a new car, and you decide to use a scoring model to decide among four options. What would be your top three criteria and what would be each criteria's relative weight? (objective #5, evaluating, p. 46)

Example: Appearance—5 (on 1-5 scale of importance)
MPG—3
Cost—2

8. Under what circumstances should a selected project take precedence over other selected projects? (objective #4, analyzing, p. 48)

If a project is urgent, its delay would be extremely costly either financially or in terms of hoped-for benefits, or it is mandated by the government or other controlling body.

9. If you are a contractor looking for project work, why might you decide *not* to pursue a particular project opportunity? (objective #3, synthesis, pp. 50-51)

You might decide not to pursue an opportunity if your company had no strategic advantage and/or was likely to be outbid by a competitor; you do not have the resources to complete the project according to its performance criteria; or if being awarded this contract would inhibit your chances at other work that is a better fit for your company.

10. What are the four main areas of competency a client company is looking for in a project manager? How can you best demonstrate these competencies to a potential client? (objective #6, applying, p. 51)

Technical, Management, Financial, Operational; show examples/references for previous work; come up with a risk management plan, etc.

PMBOK® Guide Questions

- 1) A collection of projects, programs, and operations managed as a group to achieve strategic objectives are called a:

- a) Process
- b) Portfolio
- c) Subprogram
- d) Life cycle

Answer: b

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- 2) Projects may be undertaken as a result of any of the following strategic reasons except:

- a) Social need
- b) Market demand
- c) Need to keep workers busy during slow times
- d) Environmental considerations

Answer: c

Pages 41-42 in textbook

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- 3) A narrative description of products, services or results to be delivered by the project is a:

- a) Request for information
- b) Business case
- c) Project statement of work
- d) Elevator pitch

Answer: c

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- 4) All of the following are true *except*:

- a) A portfolio may contain multiple programs and projects
- b) A project manager has the discretion to make trade-offs in regard to which programs to pursue.

- c) A program manager has the discretion to make trade-offs in regard to which projects to pursue.
- d) Projects have a finite timeline, while programs may exist as long as the parent organization does.

Answer: b

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- 5) Which of the following is a financial analysis tool that an organization may use to determine the cost-value of potential projects?
- a) Payback Period (PP)
 - b) Internal Rate of Return (IRR)
 - c) Net Present Value (NPV)
 - d) All of the above

Answer: d

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- 6) All projects should be aligned with their organization's strategic plan, which includes the organization's vision, goals, and objectives. Which of these describes an organization's vision?
- a) Conveys a larger sense of organizational purpose, and is both inspiring and guiding.
 - b) Describes short and long term results along with measures to determine if they have been achieved.
 - c) Includes the organization's core purpose, core values, beliefs, culture, primary business, and primary customers.
 - d) Is SMART: specific, measurable, achievable, results-based, and time-specific.

Answer: a

Pages 34-35 in textbook

Page 7 PMBOK 6th Edition

- 7) The _____ best describe(s) *why* a project is being undertaken.
- a) statement of work
 - b) business case
 - c) subprojects
 - d) source selection criteria

Answer: b

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- 8) The document that includes the necessary information to determine whether a project is worth the required investment, and is used for decision making by upper management, is called the:

- a) Project Scope Statement
- b) Project Charter
- c) Business Case
- d) Case Study

Answer: c

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- 9) An organization's vision often includes reference to its social, environmental, and economic health, collectively referred to as the:

- a) triple bottom line
- b) business case
- c) statement of work (SOW)
- d) net present value (NPV)

Answer: a

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Page 7 PMBOK 6th Edition

- 10) A business case typically contains information regarding the business need and a financial analysis. Which financial model divides the cash flow by the initial cash outlay?

- a) Benefit-Cost Ratio (BCR)
- b) Internal Rate of Return (IRR)
- c) Net Present Value (NPV)
- d) Payback Period (PP)

Answer: a

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EXERCISES – SOLUTIONS

- 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	

Project\Criteria & Weight	Criteria 1 10	Criteria 2 6	Criteria 3 4	Weighted Total Score
Project A	4 40	3 18	5 20	78
Project B	3 30	2 12	3 12	54
Project C	2 20	4 24	3 12	56
Project D	1 10	3 18	4 16	44

Select Project A first. We are quite confident about that selection since Project A scored considerably higher than all others. The second project to be selected is Project B, but Project C is in a virtual tie, so we would prefer to discuss the relative merits of each, perhaps considering additional “tie-breaking” criteria, before making the final selection. Project D is

a distant fourth, so if given the ability to perform three projects, I would be very comfortable with A, B, and C.

- 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 7	Criteria 3 3	Weighted Total Score
Project A	1	3	4	
Project B	3	5	3	
Project C	5	4	3	
Project D	2	3	1	

Project/Criteria & Weight	Criteria 1 10	Criteria 2 7	Criteria 3 3	Weighted Total Score
Project A	1 10	3 21	4 12	43
Project B	3 30	5 35	3 9	74
Project C	5 50	4 28	3 9	87
Project D	2 20	3 21	1 3	44

We would pick Project C first and Project B second. We feel confident in those selections as the scores are quite different than the others. We would be hard pressed to select a third project without additional information. Projects A and D are in a virtual tie.

3. Pretend you are 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.

Answers will vary. The criteria developed would apply to projects that either are starting with a new compound (entirely new drug which may take a long time to get to market), a variation on a compound that is already partially studied (getting a variation of a drug to market sooner), or the purchase of a drug another company has fully or partially developed (perhaps getting the drug to market much quicker). Some criteria might include: speed in getting a new pharmaceutical to market, probability of success, cost of the project, and similarity with the company's existing products (alignment). The weightings can also vary, but students should be prepared to explain the logic behind why they chose the weights they did. Speed in getting a drug to market should be one of the highly rated criteria.

4. Pretend you are 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.

Answers will vary. Projects may include cost reduction improvement projects and new product development projects. Cost will certainly be one of the higher rated criteria. Others may include probability of success and alignment with current products and/or organizational strategy.

SUBURBAN HOMES CONSTRUCTION PROJECT

Students must be encouraged to follow the process outlined in the Exhibit 2.1. Before using this process, the students must be encouraged to review all the information provided about the Suburban Homes case study in Chapters 1 and 2. After reviewing the information, first task is to define vision and mission of the Suburban Homes. The vision and mission must include two aspects: first, its ambitious business expansion plan in different regions of the US and second, developing and retaining the brand image of quality construction and quality homes. The third and an indirect aspect is the business growth and resultant profits. Students must be encouraged to develop strategic objectives based on the vision and mission statements and we must ensure that these objectives are directly derived from the mission statement. All these strategic objectives can be considered for the project selection model. Finally, the selection model, similar to Exhibit 2.10, is recommended for translating these strategic objectives into project selection criteria. Further, the construction company must maintain a balance portfolio of six options outlined in the case

study. This balance portfolio would, to a large extent, depend on the SWOT analysis as described in Exhibit 2.2.

CASA DE PAZ DEVELOPMENT PROJECT

Look for an elevator pitch for the website development that is just a few sentences long, but tells what the students propose to include and why it will be useful. There is no textbook answer, but rather an easy to follow description and compelling logic.

SEMESTER PROJECT

The primary thing students can do in this chapter regarding their example project is to discover why the organization selected the project. This involves learning enough about the organization's vision and mission to understand how the project will help achieve both. Remind students that executives consider projects to be investments (of money, workers' time, or both) and they want to have confidence they will get a good return on their investment. We generally have a class discussion about this, rather than an assignment. We tell the students we want them to be able to articulate how the project will be of value to the organization. This not only gives the students a great start on writing the business case section in the project charter (Chapter 3, but it also starts to help the students develop a strong attachment to their project. This can lead to more student work on the project and to discussions regarding passion for a project and how that helps when projects go through difficult periods.



CONTEMPORARY PROJECT MANAGEMENT, 4E

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Project Selection and Prioritization

Chapter 2 Project Selection and Prioritization

PMBOK® 6E COVERAGE	
PMBOK® 6E	OUTPUTS
1.2 Foundational Elements	Elevator Pitch
Selecting Projects	Project Selection and Prioritization Matrix
	Project Resource Assignment Matrix

Chapter 2 Core Objectives

- Explain the strategic planning and portfolio management processes.
- Describe how to select, prioritize, and resource projects as an outgrowth of strategic planning.
- From a contractor's viewpoint, describe how to secure projects.

Chapter 2 Technical Objectives

- Compare strengths and weaknesses of using financial and scoring models to select projects.
- Demonstrate how to select and prioritize projects using a scoring model.

Chapter 2 Behavioral Objectives

- Explain the strengths an organization might possess that could improve its ability to perform projects.

Strategic Planning Process

- Strategic Analysis
- Guiding Principles
 - Vision
 - Mission Statement
- Strategic Objectives
- Flow-down Objectives

Strategic Planning and Portfolio Alignment

EXHIBIT 2.1

STRATEGIC PLANNING AND PORTFOLIO ALIGNMENT



Strategic Analysis

- SWOT Analysis (Strengths, Weaknesses, Opportunities, and Threats)
- Elements within the project team's control
- Elements over which the project team has little/no control

SWOT Analysis for the Built Green Home at Suncadia

EXHIBIT 2.2

SWOT ANALYSIS FOR THE BUILT GREEN HOME AT SUNCADIA

STRENGTHS

Green building has a buzz
Seattle has a strong green building community support
Strong community support
Growth in green building projects that demonstrate value
Need to provide numbers on green building value
Committed developer and builder

OPPORTUNITIES

Uniqueness of product
Location
Community surrounding house
Lack of data on green building (wealth) value

WEAKNESSES

Green building has not reached mainstream
Limited project resources community
Distance away from Seattle
Green building is perceived to be costly
High cost of green projects

THREATS

Existing thinking on green building and its niche focus
Building schedule
Community (location)
Rumors

Source: Brenda Nunes, developer, BuiltGreen Home at Suncadia.

Breakout session! SWOT analysis



STRENGTHS



WEAKNESSES



OPPORTUNITIES



THREATS

Guiding Principles

- The vision is one sentence that describes the organization in the future

- Requires extra effort to be achieved
- Multiyear goals may require need for a new vision

Triple Bottom Line

- Social
- Environmental
- Economic

- Mission statement - mechanism for achieving the vision

Organization's core purpose

Culture

Core values

Primary business

Beliefs

Primary customers

Mission Statement Considerations

- Purpose

why an
organization exists

- Core values

how decisions
will be made

- Beliefs

how people will
be treated

what the leaders
stand for

Mission Statement Considerations

- Culture



how members
should act

- Primary business areas



what business the
organization
engages in

- Primary customers



which groups of
people need to be
satisfied

Cincinnati Children's Hospital Medical Center

Vision and Mission

EXHIBIT 2.3

CINCINNATI CHILDREN'S HOSPITAL MEDICAL CENTER VISION AND MISSION



Vision

Cincinnati Children's Hospital Medical Center will be the leader in improving child health.

Mission Statement

Cincinnati Children's will improve child health and transform delivery of care through fully integrated, globally recognized research, education and innovation. For patients from our community, the nation and the world, the care we provide will achieve the best:

- Medical and quality of life **outcomes**
- Patient and family **experiences** and
- **Value**

today and in the future.



Source: Cincinnati Children's Hospital Medical Center, <http://www.cincinnatichildrens.org/about/mission/>, accessed May 22, 2013.

Strategic Objectives

- Means of achieving the vision and mission
- Objective setting occurs annually
- Describe short- term and long-term results
- Describe measures of achievement

Effective objectives are

Specific
Measurable
Achievable
Results-based
Time-specific

SMART

Internet Society Strategic Objectives

EXHIBIT 2.4

INTERNET SOCIETY STRATEGIC OBJECTIVES FOR 2012-2014 PLANNING CYCLE

1. Foster an open, innovative, and trusted Internet worldwide.
2. Advance policies and strategies that strengthen the Internet's growth and evolution.
3. Enable a vibrant organization and vital global community to enhance the Internet's future.
4. Empower people to achieve human potential through unencumbered Internet use.

Source: <http://www.internetsociety.org/who-we-are/mission>, accessed May 22, 2013.

Flow-down Objectives

- Enforce strategic objectives
- Implemented through ongoing operations
- Projects are the primary method for implementing objectives

Portfolio Management

- Portfolios
- Programs
- Projects and subprojects
- Assess organization's ability to perform projects

Portfolios

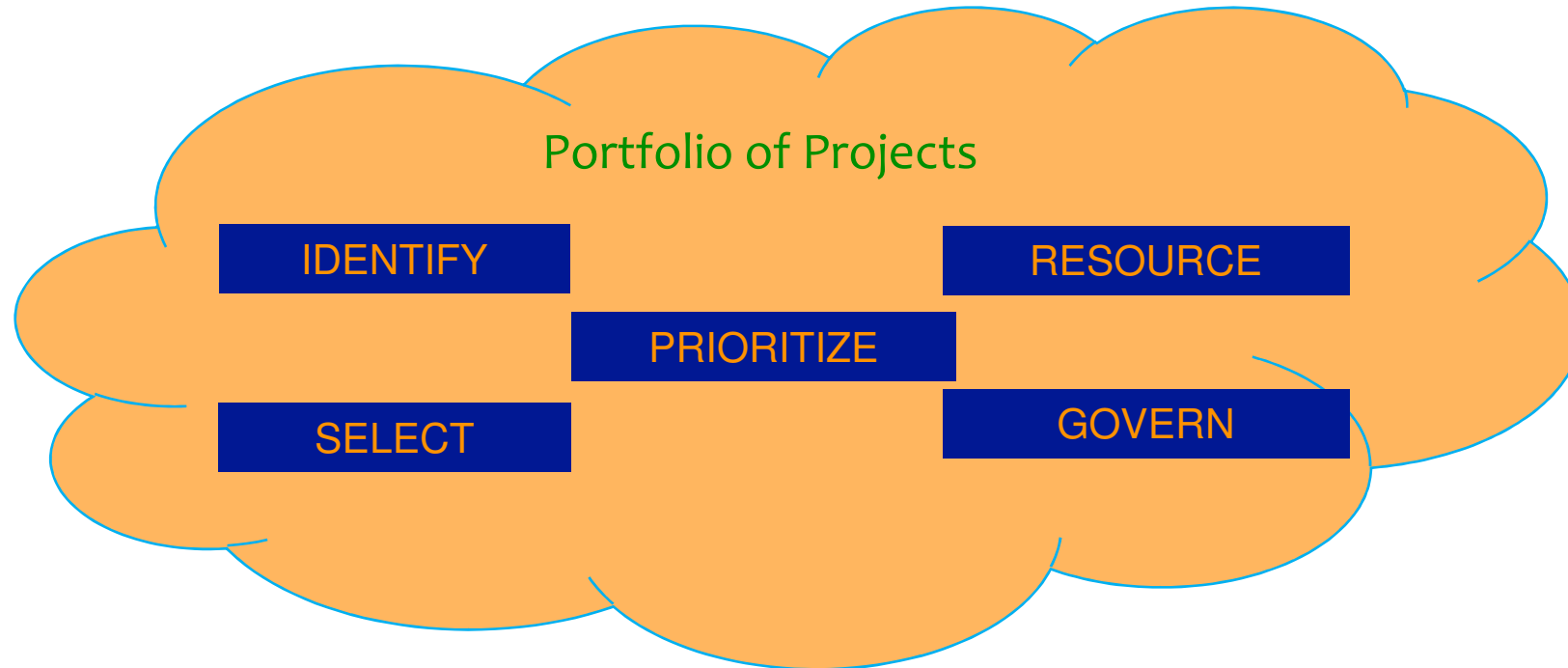
- Composed of projects, programs, sub-portfolios, and ongoing operations
- Seek a balance between:
 - Large and small projects
 - High-risk, high-reward and low-risk projects
 - Quick completion and substantial time projects

Programs

- Include a group of related projects, subprograms, and activities
- Last as long as the organization lasts
- Projects within a program are of limited duration
- Managed at a level above the project manager

The Project Portfolio

- A collection of projects grouped to be collectively managed
- Portfolio management:



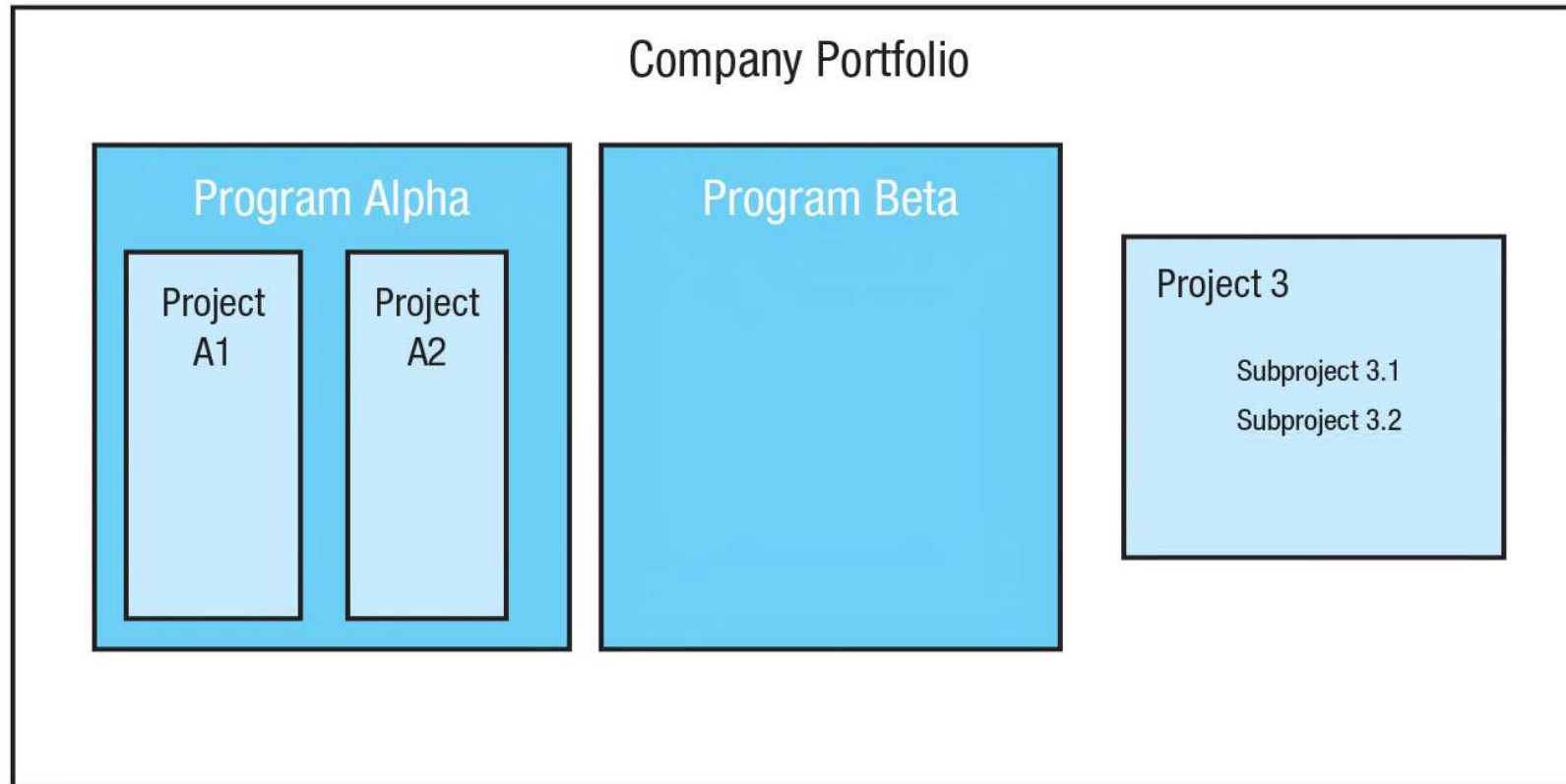
Projects and Subprojects

- A large project may be composed of multiple subprojects
- The project manager coordinates subprojects and makes decisions that are best for the overall project
- A subproject comes from dividing a project into more manageable pieces

Portfolio, Program, Project, and Subproject Relationships

EXHIBIT 2.5

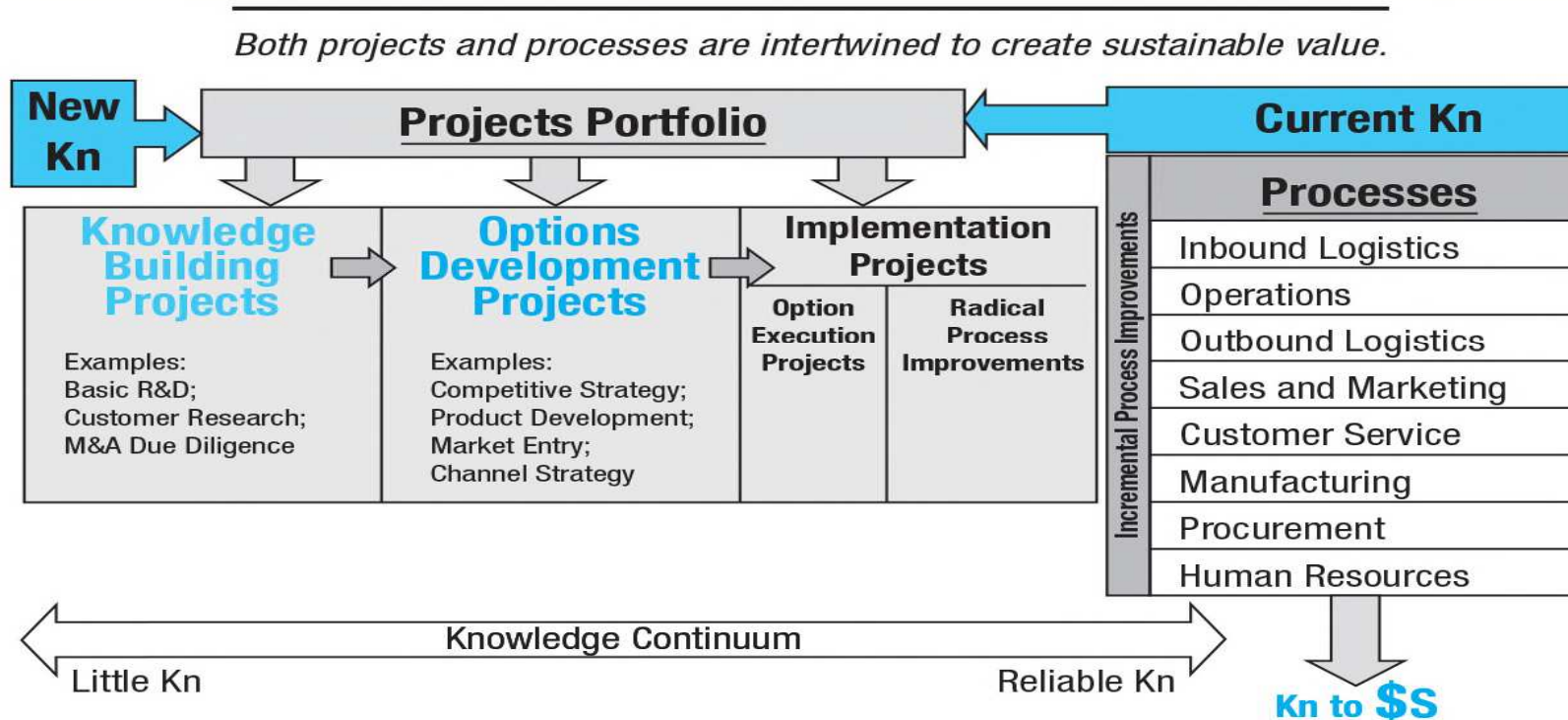
PORTFOLIO, PROGRAM, PROJECT, AND SUBPROJECT RELATIONSHIPS



Portfolio of Projects and Operational Work Processes

EXHIBIT 2.6

PORTFOLIO OF PROJECTS AND OPERATIONAL WORK PROCESSES



Source: Chinta, Ravi and Timothy J. Kloppenborg, Projects and Processes for Sustainable Organizational Growth, SAM Advanced Management Journal 75 (3) (Spring 2010), p. 24.

Reasons for Project Failure

- Not enough resources
- Not enough time
- Unclear expectations
- Changes to the project
- Disagreement about expectations

Projects must be aligned with the goals of the parent organization.

Assess Organization's Ability to Perform Projects

TEAMWORK

Do we have a teamwork attitude, free and open communication, creativity, and empowered decision-making?

PM Process

Do we have a clearly defined project management process?

ASSOCIATES

Do our associates have the right attitudes, skills, and competencies to use the project management process?

LEADERS

Are our leaders at each level willing to take appropriate personal risk?

Assess Organization's Ability to Perform Projects

FOUNDATION

Does senior leadership establish a strong leadership foundation?

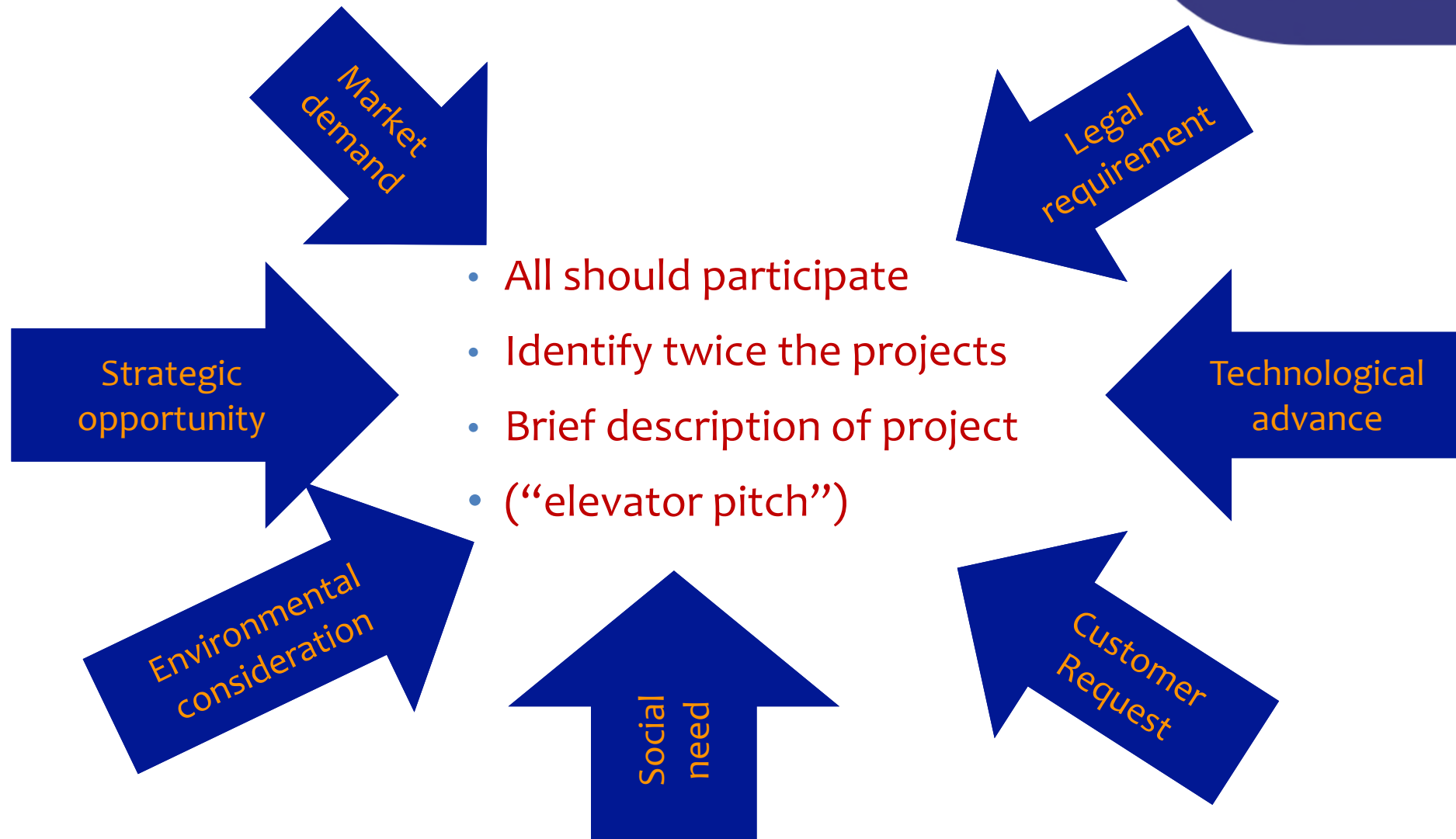
LEADERSHIP

Do individuals and teams exhibit leadership at their respective levels?

EXTERNAL ENVIRONMENT

Do we monitor and understand our external environment?

Identifying Potential Projects



Identifying Potential Projects

- Summarize the work

statement of work – what will be done and/or produced?

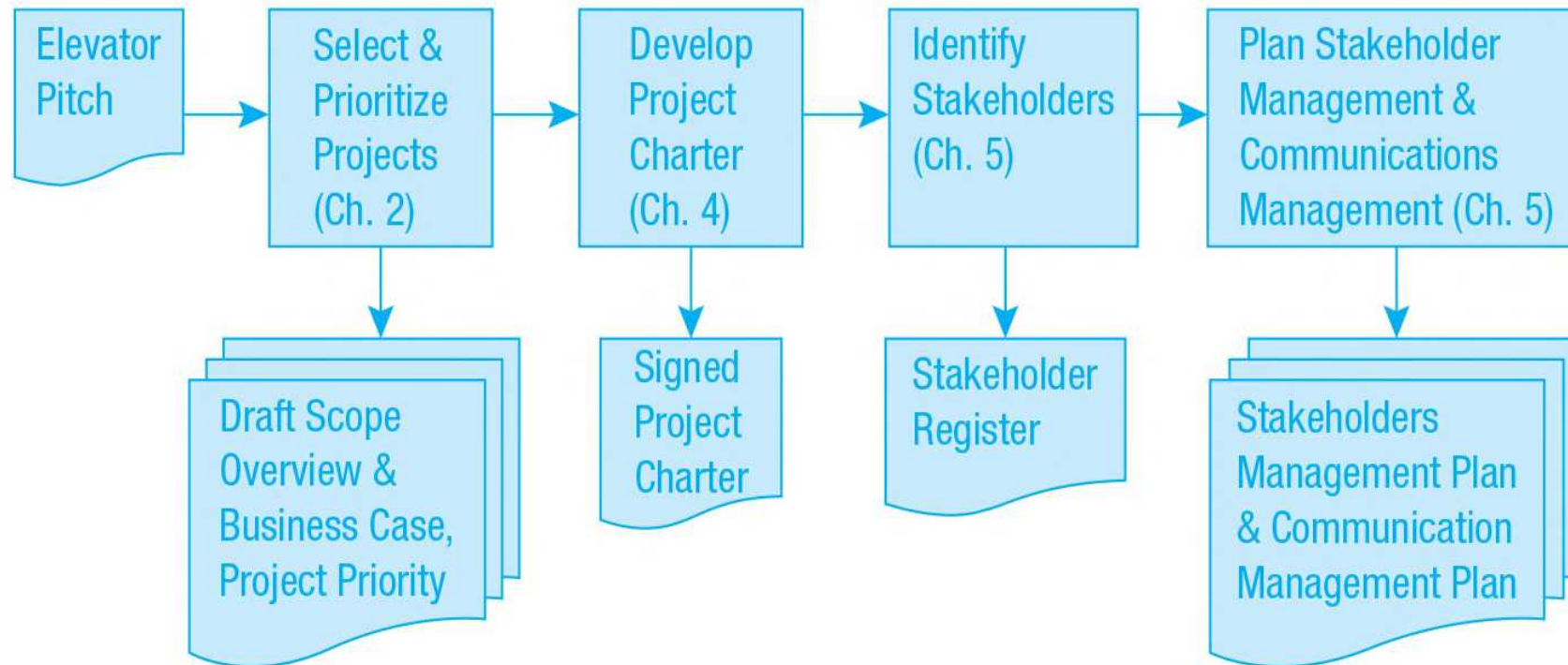
- Why the project is important

business case – why is this project worth the organization's investment?

Project Selection, Prioritization, and Initiation

EXHIBIT 2.7

PROJECT SELECTION, PRIORITIZATION, AND INITIATION



Methods for Selecting Projects

What value does each potential project brings to the organization?

Are the demands of performing each project understood?

Are the resources needed to perform the project available?

Methods for Selecting Projects

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?

Methods for Selecting Projects

- Include financial and scoring models
 - Projects are investments
- Three different approaches
 - Financial analysis as the primary means of selection
 - Financial models as screening devices
 - Financial justification as one factor in a multi-factor scoring model

Using a Cost-Benefit Analysis Model to Select Projects

Net Present Value (NPV)

- Most widely accepted model
- Discount the expected future value
- Subtract discounted costs from discounted benefits

Benefit-Cost Ratio (BCR)

- Divide the cash flow by the initial cash outlay
- A ratio above 1.0 means the project is expected to profit

Using a Cost-Benefit Analysis Model to Select Projects

Internal rate of return (IRR)

- Percentage return expected on the investment
- A ratio above the current cost of capital
- Higher IRR is better

PAYBACK PERIOD (PP)

- Time required to pay back the initial project investment
 - Shorter payback periods are desirable

Using a Cost-Benefit Analysis Model to Select Projects

- Financial models ensure the cost and return perspective.
- Financial models DO NOT ensure alignment with strategic goals.

Financial Models for Project Selection

EXHIBIT 2.8

FINANCIAL MODELS FOR PROJECT SELECTION

	NET PRESENT VALUE (NPV)	BENEFIT-COST RATIO (BCR)	INTERNAL RATE OF RETURN (IRR)	PAYBACK PERIOD (PP)
<i>Calculation</i>	PV revenue – PV cost	Cash flow/Project investment	Percentage return on project investment	Project costs/Annual cash flows
<i>Neutral Result</i>	NPV = \$0	Ratio = 1.0	IRR = Cost of capital	Payback period = Accepted length
<i>If used to screen projects or to select projects outright</i>	NPV > Acceptable amount	Ratio > Acceptable amount	IRR > Acceptable amount	Payback period < Acceptable length
<i>If used to compare projects</i>	Higher NPV better	Higher ratio better	Higher IRR better	Shorter payback period better

Using a Scoring Model to Select Projects

- Scoring models often used when multiple important criteria exist
 1. Identify potential criteria
 2. Determine mandatory criteria
 3. Weight criteria
 4. Evaluate projects
 5. Sensitivity analyses

Examples of Project Selection Criteria

EXHIBIT 2.9

EXAMPLES OF PROJECT SELECTION CRITERIA

- How well does this project fit with at least one organizational objective?
- How many customers are there for the expected results?
- How competitively can the company price the project results?
- What unique advantages will this project provide?
- Does the company have the resources needed?
- What is the probability of success?
- Are the data needed to perform the project available or easily collected?
- Do the key stakeholders agree that the project is needed?
- What is the expected return on investment?
- How sustainable will the project results be?
- How does this project promote (or hinder) our corporate social responsibility?
- What risks are there if we do not perform this project?

Project Selection and Prioritization Matrix

EXHIBIT 2.10

PROJECT SELECTION AND PRIORITIZATION MATRIX

Project\Criteria & Weight	New Products 10	Customer Relations 8	Supplier Relations 5	Success Probability 5	Weighted Total Score
Project A					
Project B					
Project C					
Project D					

Completed Project Selection and Prioritization Matrix

EXHIBIT 2.11

COMPLETED PROJECT SELECTION AND PRIORITIZATION MATRIX

- Evaluate
- Rate
- Weight
- Display
- Select

Project\Criteria & Weight	New Products 10	Customer Relations 8	Supplier Relations 5	Success Probability 5	Total
Project A	5 50	3 24	5 25	2 10	109
Project B	5 50	2 16	3 15	5 25	106
Project C	1 10	5 40	3 15	3 15	80
Project D	2 20	4 32	1 5	2 10	67

Breakout session!

- First, brainstorm criteria you would use to create a scoring model
- Next, complete a selection/prioritization model like the one in Exhibit 2.10

Sensitivity Analysis

- What would happen if factors were to change?
- Some criteria may be deemed more important than others
- Add missing criteria or new alternatives

Revised Project Selection and Prioritization Matrix

EXHIBIT 2.12

REVISED PROJECT SELECTION AND PRIORITIZATION MATRIX

Project\Criteria & Weight	New Products 10	Customer Relations 8	Supplier Relations 5	Success Probability 9	Total
Project A	5 50	2 16	3 15	5 45	126
Project B	5 50	3 24	5 25	2 18	117
Project C	1 10	5 40	3 15	3 27	92
Project D	2 20	4 32	1 5	2 18	75

Source: Chris Bridges.

Prioritizing Projects

- Which projects assigned resources and scheduled to begin first
- Scoring models provide input
- Other considerations:
 - Urgency of each project
 - Cost of delaying the expected benefits
 - Practical details of timing

Alternative Breaks Project Selection and Prioritization Matrix

EXHIBIT 2.13

ALTERNATIVE BREAKS PROJECT SELECTION AND PRIORITIZATION MATRIX

PROJECT/SELECTION CRITERIA	ACTIVE SERVICE OPPORTUNITY		ISSUE ITSELF		ORGANIZATION TO WORK WITH		COST		
	9		10		6		5		Total
New York Vegan Farm	5	45	4	40	3	18	4	20	123
West Virginia Sustainability	4	36	3	30	4	24	5	25	115
Chicago Halfway House	2	18	4	40	4	24	4	20	102
El Salvador Cultural Immersion	1	9	5	50	5	30	1	5	94

Resourcing Projects: Leaders should start assigning resources from highest priority project down until resources become limited

EXHIBIT 2.14

RESOURCE ASSIGNMENT MATRIX							
PROJECT/ RESOURCE	PM/ DEJI	PM/ BUD	PM/ CORY	TEAM/ BRADLEY	TEAM/ RAJEEV	TEAM/ LARRY	MONEY
Maximum Availability	200	400	300	300	150	150	\$30 million
Project List							
Project B: PM 240, Team 200, \$5M		240		200			\$5M
Project A: PM 200, Team 150, \$10M	200				150		\$10M
Project C: PM 300, Team 150, \$14M			300			150	\$14M
Project D: PM 150, Team 180, \$4M							
Remaining Availability	0	160	0	100	0	0	\$1M

Securing Projects

- The client perspective
 - Selection and prioritization process
 - Make versus buy decision
- The contractor perspective
 - Identify potential project opportunities
 - Determine which opportunities to pursue
 - Prepare and submit project proposal
 - Negotiate to secure the project

Identify Potential Project Opportunities

- Perform portfolio alignment exercise
- Attend trade shows and professional conferences
- Practice customer relationship management
 - Establish & nurture personal contacts
 - Link information systems

Determine Which Opportunities to Pursue

- Target projects to pursue
 - Use SWOT analysis
- Determine if project will help achieve contractor objectives
- Consider cost to pursue the work
- Consider probability of securing the project
- Consider capability to perform the work

Prepare and Submit Project Proposal

- Understand the source selection criteria
- Consider technical, managerial, and financial factors in contractor selection

Typical Source Selection Criteria

EXHIBIT 2.15

TYPICAL SOURCE SELECTION CRITERIA

TECHNICAL	MANAGEMENT	FINANCIAL	OPERATIONAL
Technical experience	Management experience	Financial capacity	Production capacity
Needs understanding	Project charter	Life cycle cost	Business size and type
Technical approach	Planning and scheduling	Cost basis and assumptions	Past performance
Risk mitigation	Project control	Warranties	References

Negotiate to Secure the Project

- PM to find a solution to secure project work with enough profit potential
- Negotiate money to be paid for a project and...

Contractual
terms

Schedule

Quality
standards

Personnel

Reporting
mechanisms

Summary

- Selection begins with strategic planning
- Use SWOT analysis
- Develop mission and vision statements as guiding principles
- Use portfolio management to consider:
- Resources
 - Organizational capabilities
 - Individual capabilities

Summary

- Evaluate potential projects through financial and/or scoring models
- Prioritize selected projects for completion
- External project may be a better fit

Prioritizing Projects at LADD

- Outcomes not always predictable
- Some projects nonnegotiable—and would pave way for other, larger projects
- Focused on 12 top-ranked projects and quarterly results

PM IN ACTION