UNIT 2
Planning

LH- 7HRS

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SYSTEM ANALYSIS AND DESIGN (SAD)

CONTENTS

Planning

- The demand for new or replacement systems exceeds the ability and resources of most organizations to conduct systems development projects either by themselves or with consultants.
- This means that organizations must set priorities and a direction for systems development that will yield development projects with the greatest net benefits.
- As a systems analyst, you must analyze user information requirements, and you must also help make the business case—or justify why the system should be built and the development project conducted.
- The reason for any new or improved information system (IS) is to add value to the organization.
- As systems analysts, we must choose to use systems development resources to build the mix of systems that add the greatest value to the organization.
- The source of systems projects is either initiatives from IS planning (proactive identification of systems) or requests from users or IS professionals (reactions to problems or opportunities) for new or enhanced systems.

2.1 System development projects: Identification and Selection

2.1.1 Introduction

2.1.2 Identifying and Selecting System Development Projects

2.1.3 Corporate and information systems planning

2.1.1 Introduction

- The acquisition, development, and maintenance of information systems consume substantial resources for most organizations.
- This suggests that organizations can benefit from following a formal process for identifying and selecting projects.
- The first phase of the systems development life cycle—project identification and selection—deals with this issue.

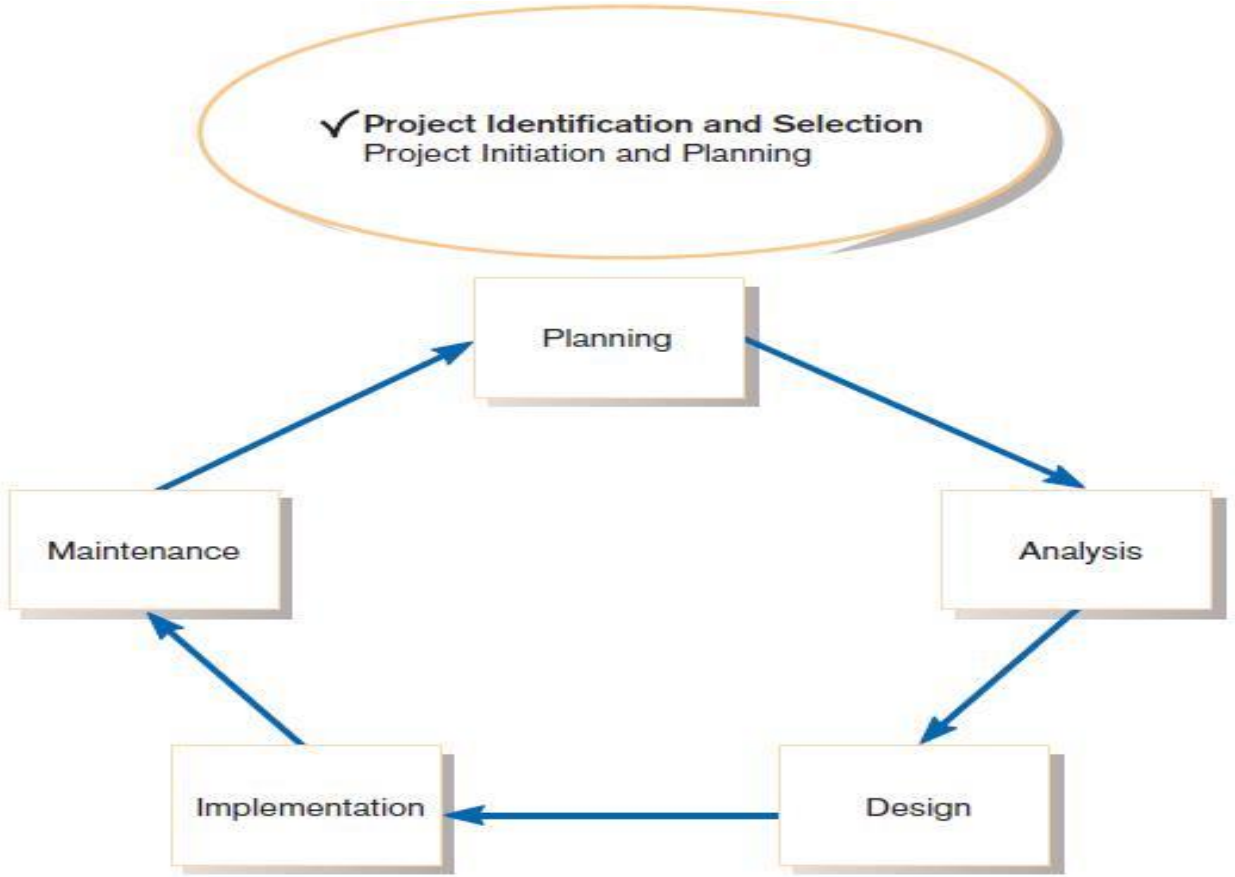


FIGURE
Systems development life cycle with project identification and selection highlighted

2.1.2 IDENTIFYING AND SELECTING SYSTEMS DEVELOPMENT PROJECTS

- The first phase of the SDLC is planning, consisting of project identification and selection, and project initiation and planning .
- During project identification and selection, a senior manager, a business group, an IS manager, or a steering committee identifies and assesses all possible systems development projects that an organization unit could undertake.
- Next, those projects deemed most likely to yield significant organizational benefits, given available resources, are selected for subsequent development activities.
- Organizations vary in their approach to identifying and selecting projects. In some organizations, project identification and selection is a very formal process in which projects are outcomes of a larger overall planning process.
- Information systems development requests come from a variety of sources.
- One source is requests by managers and business units for replacing or extending an existing system to gain needed information or to provide a new service to customers.

- Another source for requests is IS managers who want to make a system more efficient and less costly to operate, or want to move it to a new operating environment.
- A final source of projects is a formal planning group that identifies projects for improvement to help the organization meet its corporate objectives (e.g., a new system to provide better customer service).
- Regardless of how a given organization actually executes the project identification and selection process, a common sequence of activities occurs.
- We will describe a general process for identifying and selecting projects and producing the deliverables and outcomes of this process.

- Project identification and selection consists of three primary activities:

1. Identifying potential development projects
2. Classifying and ranking IS development projects
3. Selecting IS development projects

- **Identifying potential development projects**
    - Identification from a stakeholder group
- **Classifying and ranking potential IS projects**
    -Using value chain analysis or other evaluation criteria
- **Selecting projects**
    - Based on various factors

1. Identifying Potential Development Projects.

Organizations vary as to how they identify projects. This process can be performed by

- A key member of **top management**, either the CEO of a small- or medium sized organization or a senior executive in a larger organization;
- A **steering committee**, composed of a cross section of managers with an interest in systems;
- **User departments**, in which either the head of the requesting unit or a committee from the requesting department decides which projects to submit (often you, as a systems analyst, will help users prepare such requests); or
- The **development group** or a senior IS manager.

- All methods of identification have been found to have strengths and weaknesses. Research has found, for example, that projects identified by top management more often have a strategic organizational focus.
- Alternatively, projects identified by steering committees more often reflect the diversity of the committee and therefore have a cross functional focus. Projects identified by individual departments or business units most often have a narrow, tactical focus.
- Finally, a dominant characteristic of projects identified by the development group is the ease with which existing hardware and systems will integrate with the proposed project.
- Other factors, such as project cost, duration, complexity, and risk, are also influenced by the source of a given project.

- Of all the possible project sources, those identified by top management and steering committees most often reflect the broader needs of the organization.
- This occurs because top management and steering committees are likely to have a broader understanding of overall business objectives and constraints.
- Projects identified by top management or by a diverse steering committee are therefore referred to as coming from a **top-down source**.
- Projects identified by a functional manager, business unit, or by the information systems development group are often designed for a particular business need within a given business unit.
- In other words, these projects may not reflect the overall objectives of the organization.
- This does not mean that projects identified by individual managers, business units, or the IS development group are deficient, only that they may not consider broader organizational issues.
- Project initiatives stemming from managers, business units, or the development group are generally referred to as coming from a **bottom-up source**.

- These are the types of projects in which you, as a systems analyst, will have the earliest role in the life cycle as part of your ongoing support of users.
- You will help user managers provide the description of information needs and the reasons for doing the project that will be evaluated in selecting, among all submitted projects, which ones will be approved to move into the project initiation and planning phase of the SDLC.

TABLE 4-1 Characteristics of Alternative Methods for Making Information Systems Identification and Selection Decisions

Selection Method	Characteristics
Top Management	Greater strategic focus
	Largest project size
	Longest project duration
	Enterprise-wide consideration
Steering Committee	Cross-functional focus
	Greater organizational change
	Formal cost–benefit analysis
	Larger and riskier projects
Functional Area	Narrow, nonstrategic focus
	Faster development
	Fewer users, management layers, and business functions involved
Development Group	Integration with existing systems focus
	Fewer development delays
	Less concern with cost–benefit analysis

2. Classifying and Ranking IS Development Projects.

- The second major activity in the project identification and selection process focuses on assessing the relative merit of potential projects.
- As with the project identification process, classifying and ranking projects can be performed by top managers, a steering committee, business units, or the IS development group.
- Additionally, the criteria used when assigning the relative merit of a given project can vary.
- Commonly used criteria for assessing projects are summarized in Table in next slide

TABLE 4-2 Possible Evaluation Criteria When Classifying and Ranking Projects

Evaluation Criteria	Description
Value Chain Analysis	Extent to which activities add value and costs when developing products and/or services
Strategic Alignment	Extent to which the project is viewed as helping the organization achieve its strategic objectives and long-term goals
Potential Benefits	Extent to which the project is viewed as improving profits, customer service, and so forth, and the duration of these benefits
Resource Availability	Amount and type of resources the project requires and their availability
Project Size/Duration	Number of individuals and the length of time needed to complete the project
Technical Difficulty/Risks	Level of technical difficulty to successfully complete the project within given time and resource constraints

- An important project evaluation method that is widely used for assessing information systems development projects is called **value chain analysis.**
- Value chain analysis Analyzing is an organization’s activities to determine where value is added to products and/or services and the costs incurred for doing so; usually also includes a comparison with the activities, added value, and costs of other organizations for the purpose of making improvements in the organization’s operations and performance.
- Information systems projects providing the greatest benefit to the value chain will be given priority over those with fewer benefits.

3. Selecting IS Development Projects

- The final activity in the project identification and selection process is the actual selection of projects for further development.
- Project selection is a process of considering both short- and long-term projects and selecting those most likely to achieve business objectives.
- Additionally, as business conditions change over time, the relative importance of any single project may substantially change.
- Thus, the identification and selection of projects is a very important and ongoing activity.
- Numerous factors must be considered when making project selection decisions.

- Figure shows that a selection decision requires that the perceived needs of the organization, existing systems and ongoing projects, resource availability, evaluation criteria, current business conditions, and the perspectives of the decision makers will all play a role in project selection decisions.
- Numerous outcomes can occur from this decision process. Of course, projects can be accepted or rejected.

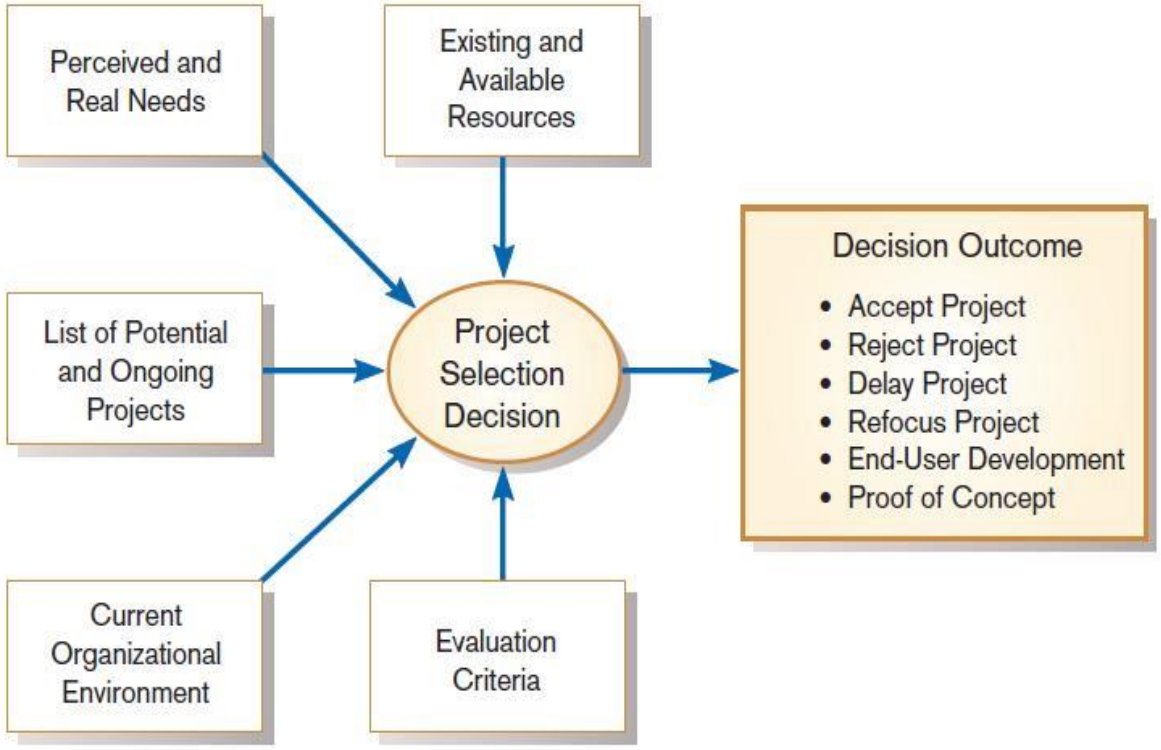


FIGURE
Project selection decisions must consider numerous factors and can have numerous outcomes.

- Acceptance of a project usually means that funding to conduct the next phase of the SDLC has been approved.
- Rejection means that the project will no longer be considered for development. However, projects may also be conditionally accepted; they may be accepted pending the approval or availability of needed resources or the demonstration that a particularly difficult aspect of the system can be developed.
- Projects may also be returned to the original requesters, who are told to develop or purchase the requested system. Finally, the requesters of a project may be asked to modify and resubmit their request after making suggested changes or clarifications.

- One method for deciding among different projects or alternative designs is:
  - For each requirement or constraint:

    Score= weight X Rating
  - Each alternative: sum scores across requirements/constraints.
  - Alternative with highest score wins.

Criteria	Weight	Alternative A		Alternative B		Alternative C	
		Rating	Score	Rating	Score	Rating	Score
Requirements							
Real-time data entry	18	5	90	5	90	5	90
Automatic reorder	18	1	18	5	90	5	90
Real-time data query	14	1	14	5	70	5	70
	50		122		250		250
Constraints							
Developer costs	15	4	60	5	75	3	45
Hardware costs	15	4	60	4	60	3	45
Operating costs	15	5	75	1	15	5	75
Ease of training	5	5	25	3	15	3	15
	50		220		165		180
Total	100		342		415		430

FIGURE 4-4
Alternative projects and system design decisions can be assisted using weighted multicriteria analysis

DELIVERABLES AND OUTCOMES

- The primary deliverable from the first part of the planning phase is a schedule of specific IS development projects, coming from both top-down and bottom-up sources, to move into the next part of the planning phase—project initiation and planning
- An outcome of this phase is the assurance that careful consideration was given to project selection, with a clear understanding of how each project can help the organization reach its objectives.
- Due to the principle of **incremental commitment**, a selected project does not necessarily result in a working system.
- **Incremental commitment**: a strategy in systems analysis and design in which the project is reviewed after each phase and continuation of the project is rejustified.

- After each subsequent SDLC phase, you, other members of the project team, and organizational officials will reassess your project to determine whether the business conditions have changed or whether a more detailed understanding of a system’s costs, benefits, and risks would suggest that the project is not as worthy as previously thought.
- Many organizations have found that in order to make good project selection decisions, a clear understanding of overall organizational business strategy and objectives is required.
- This means that a clear understanding of the business and the desired role of information systems in achieving organizational goals is a precondition to improving the identification and selection process.

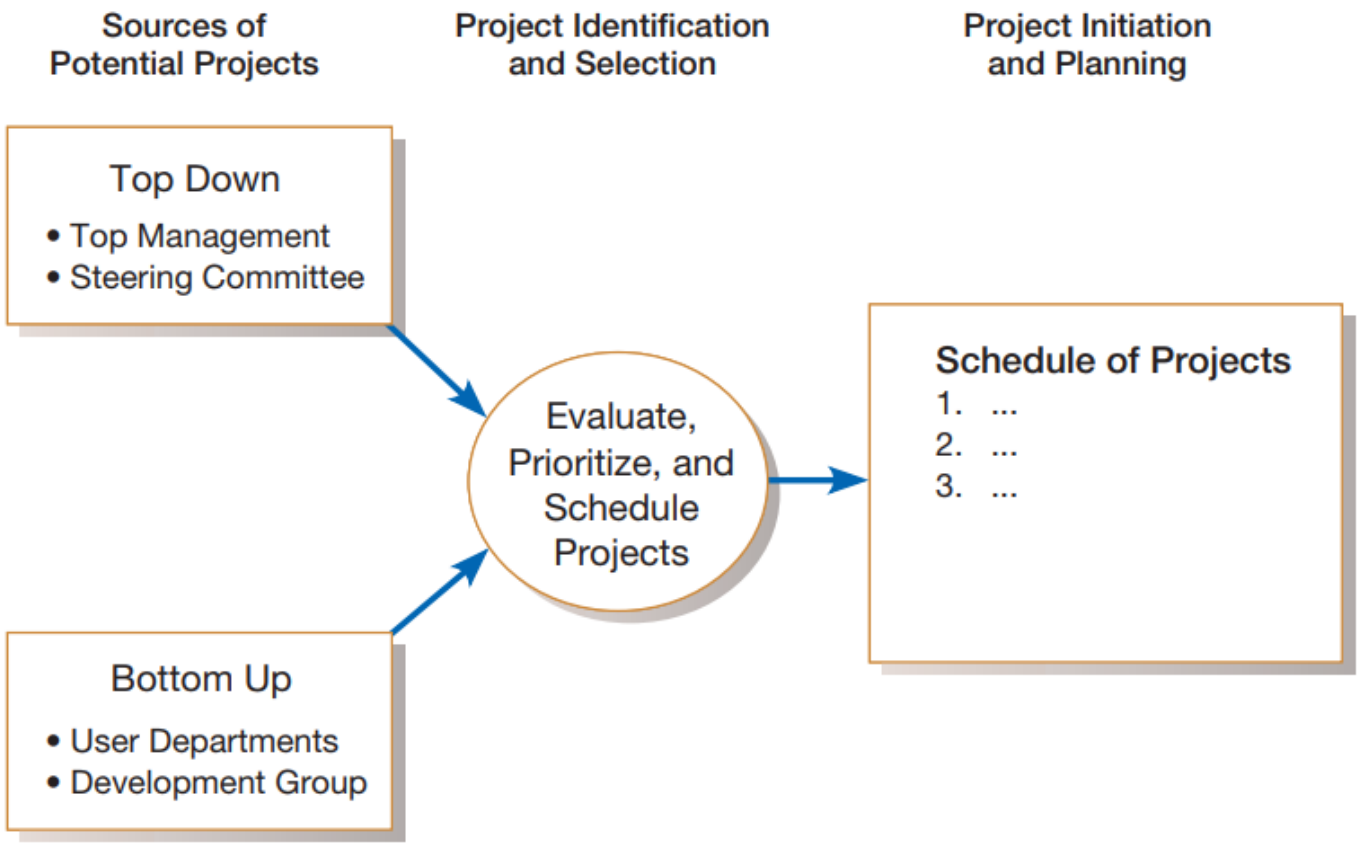


FIGURE 4-5
Information systems development projects come from both top-down and bottom-up initiatives

2.1.3 CORPORATE AND INFORMATION SYSTEMS PLANNING

The need for improved information systems project identification and selection is readily apparent when we consider factors such as the following:

1. The cost of information systems has risen steadily and approaches 40 percent of total expenses in some organizations.

2. Many systems cannot handle applications that cross organizational boundaries.

3. Many systems often do not address the critical problems of the business as a whole or support strategic applications.

4. Data redundancy is often out of control, and users may have little confidence in the quality of data.

5. Systems maintenance costs are out of control as old, poorly planned systems must constantly be revised.

6. Application backlogs often extend three years or more, and frustrated end users are forced to create (or purchase) their own systems, often creating redundant databases and incompatible systems in the process.

- Careful planning and selection of projects alone will certainly not solve all of these problems.
- We believe, however, that a disciplined approach, driven by top management commitment, is a prerequisite for most effectively applying information systems in order to reach organizational objectives.
- The focus of this section is to provide you with a clear understanding of how specific development projects with a broader organizational focus can be identified and selected.
- Specifically, we describe corporate strategic planning and information systems planning, two processes that can significantly improve the quality of project identification and selection decisions.

CORPORATE STRATEGIC PLANNING

- A prerequisite for making effective project selection decisions is to gain a clear idea of where an organization is, its vision of where it wants to be in the future, and how to make the transition to its desired future state.
- Figure represents this as a three-step process.
- The **first step** focuses on gaining an understanding of the current enterprise. In other words, if you don't know where you are, it is impossible to tell where you are going.
- **Next**, top management must determine where it wants the enterprise to be in the future.
- Finally, after gaining an understanding of the current and future enterprise, a strategic plan can be developed to guide this transition.

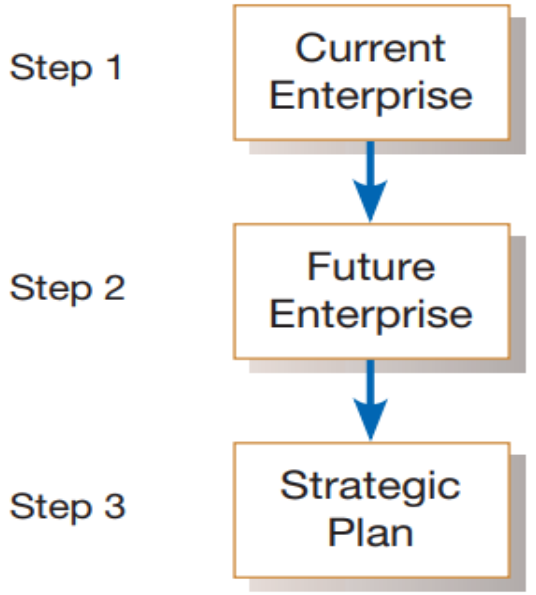


FIGURE 4-6
Corporate strategic planning is a three-step process

- The process of developing and refining models of the current and future enterprise as well as a transition strategy is often referred to as **corporate strategic planning.**
- *Corporate strategic planning is an ongoing process that defines the mission, objectives, and strategies of an organization.*
- During corporate strategic planning, executives typically develop a mission statement, statements of future corporate objectives, and strategies designed to help the organization reach its objectives.
- All successful organizations have a mission.
- The **mission statement** of a company typically states in very simple terms what business the company is in.
- *Mission statement is a statement that makes it clear what business a company is in.*

Mission statement

Pine Valley Furniture
Corporate Mission Statement

We are in the business of designing, fabricating, and selling to retail stores high-quality wood furniture for household, office, and institutional use. We value quality in our products and in our relationships with customers and suppliers. We consider our employees our most critical resource.

FIGURE
Mission statement (Pine Valley Furniture)

Objectives

Pine Valley Furniture
Statement of Objectives

1. PVF will strive to increase market share and profitability (prime objective).
2. PVF will be considered a market leader in customer service.
3. PVF will be innovative in the use of technology to help bring new products to market faster than our competition.
4. PVF will employ the fewest number of the highest-quality people necessary to accomplish our prime objective.
5. PVF will create an environment that values diversity in gender, race, values, and culture among employees, suppliers, and customers.

FIGURE
Statement of Corporate Objectives (Pine Valley Furniture)

- After defining its mission, an organization can then define its objectives.
- **Objective statements** refer to “broad and timeless” goals for the organization.
- These goals can be expressed as a series of statements that are either qualitative or quantitative but that typically do not contain details likely to change substantially over time.
- Objectives are often referred to as critical success factors.
- Once a company has defined its mission and objectives, a competitive strategy can be formulated.
- *Objective statements A series of statements that express an organization’s qualitative and quantitative goals for reaching a desired future position.*
- **A competitive strategy** is the method by which an organization attempts to achieve its mission and objectives.
- In essence, the strategy is an organization’s game plan for playing in the competitive business world.
- *Competitive strategy is the method by which an organization attempts to achieve its mission and objectives.*

Competitive Strategy

TABLE 4-3 Generic Competitive Strategies

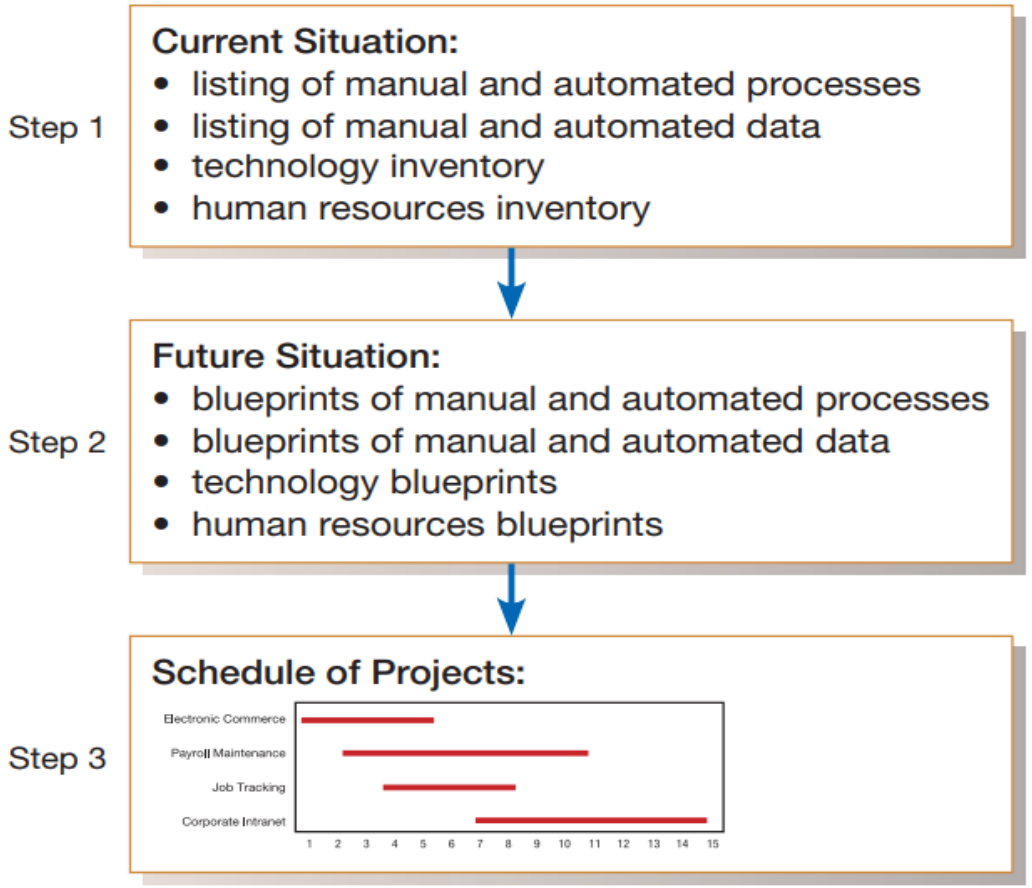
Strategy	Description
Low-Cost Producer	This strategy reflects competing in an industry on the basis of product or service cost to the consumer. For example, in the automobile industry, the South Korean–produced Hyundai is a product line that competes on the basis of low cost.
Product Differentiation	This competitive strategy reflects capitalizing on a key product criterion requested by the market (for example, high quality, style, performance, roominess). In the automobile industry, many manufacturers are trying to differentiate their products on the basis of quality (for example, "At Ford, quality is job one.").
Product Focus or Niche	This strategy is similar to both the low-cost and differentiation strategies but with a much narrower market focus. For example, a niche market in the automobile industry is the convertible sports car market. Within this market, some manufacturers may employ a low-cost strategy while others may employ a differentiation strategy based on performance or style.

niche: a job or position which is very suitable for someone, especially one that they like or an area or position which is exactly suitable for a small group of the same type

INFORMATION SYSTEMS PLANNING (ISP)

- The second planning process that can play a significant role in the quality of project identification and selection decisions is called information systems planning (ISP).
- ISP is an orderly means of assessing the information needs of an organization and defining the information systems, databases, and technologies that will best satisfy those needs.
- This means that during ISP you (or, more likely, senior IS managers responsible for the IS plan) must model current and future organization informational needs and develop strategies and project plans to migrate the current information systems and technologies to their desired future state.
- ISP is a top-down process that takes into account the outside forces—industry, economic, relative size, geographic region, and so on—that are critical to the success of the firm.
- This means that ISP must look at information systems and technologies in terms of how they help the business achieve its objectives as defined during corporate strategic planning.

- Like corporate strategic planning, ISP is a three-step process in which the first step is to **assess current IS-related assets**—human resources, data, processes, and technologies.
- Next, **target blueprints** of these resources are developed. These blueprints reflect the desired **future state** of resources needed by the organization to reach its objectives as defined during strategic planning.
- Finally, **a series of scheduled projects** is defined to help move the organization from its current to its future desired state.



For example, a project may focus on reconfiguration of a telecommunications network to speed data communications or it may restructure work and data flows between business areas. Projects can include not only the development of new information systems or the modification of existing ones, but also the acquisition and management of new systems, technologies, and platforms. These three activities parallel those of corporate strategic planning, and this relationship is shown in Figure.

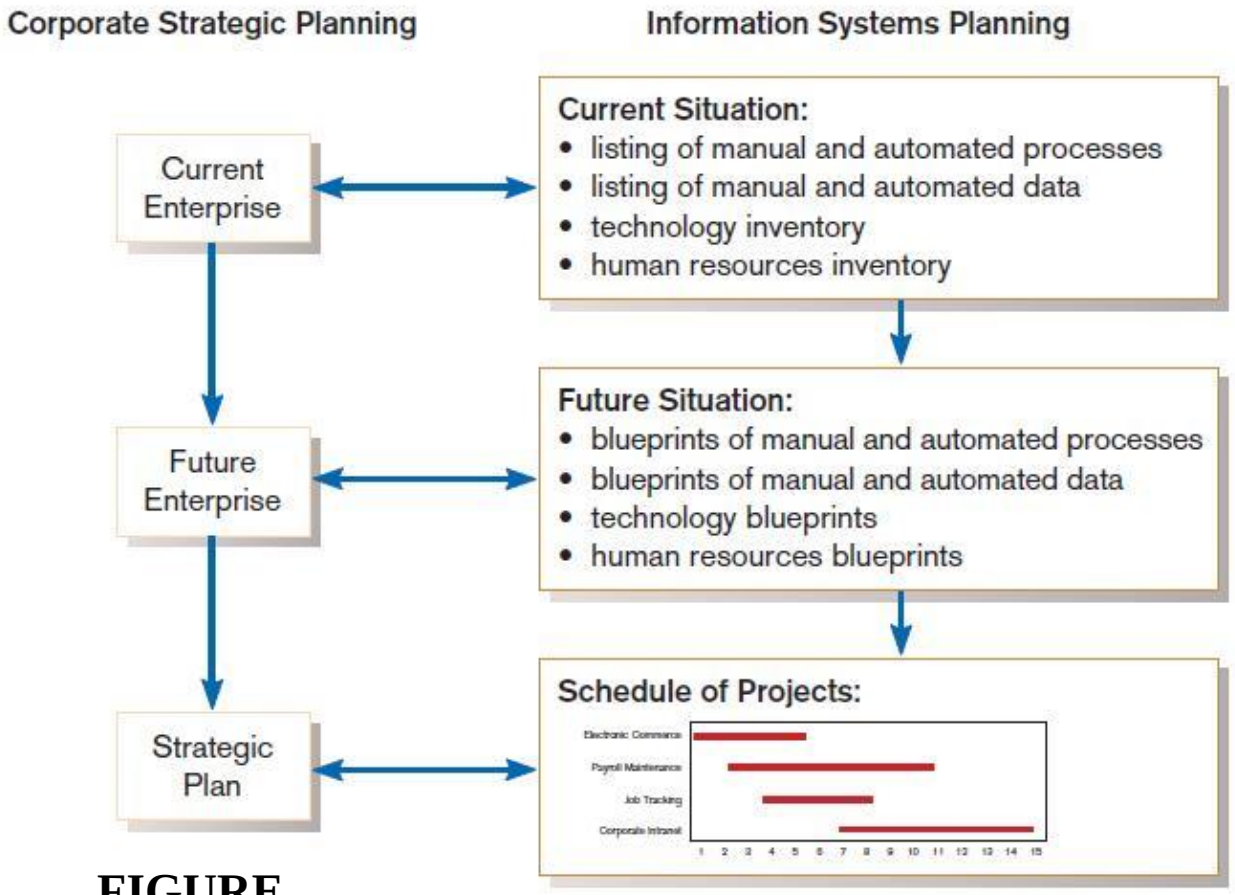


FIGURE
Parallel activities of corporate strategic planning and information systems planning

1. Describe the current situation

- The most widely used approach for describing the current organizational situation is generically referred to as **top-down planning**. Top-down planning attempts to gain a broad understanding of the informational needs of the entire organization. The approach begins by conducting an extensive analysis of the organization's mission, objectives, and strategy and determining the information requirements needed to meet each objective.
- In contrast to the top-down planning approach, **a bottom-up planning** approach requires the identification of business problems and opportunities that are used to define projects. Using the bottom-up approach for creating IS plans can be faster and less costly than using the top-down approach; it also has the advantage of identifying pressing organizational problems.
- Yet, the bottom-up approach often fails to view the informational needs of the entire organization. This can result in the creation of disparate information systems and databases that are redundant or not easily integrated without substantial rework.

Advantages to the top-down planning approach over other planning approaches.

Advantages	Description
Broader Perspective	If not viewed from the top, information systems may be implemented without first understanding the business from general management's viewpoint.
Improved Integration	If not viewed from top, totally new management information systems may be implemented rather than planning how to evolve existing systems.
Improved Management Support	If not viewed from the top, planners may lack sufficient management acceptance of the role of information systems in helping them achieve business objective.
Better Understanding	If not viewed from the top, planners may lack the understanding necessary to implement information systems across the entire business rather than simply to individual operating units.

2. Describing the target situation, trends, and constraints

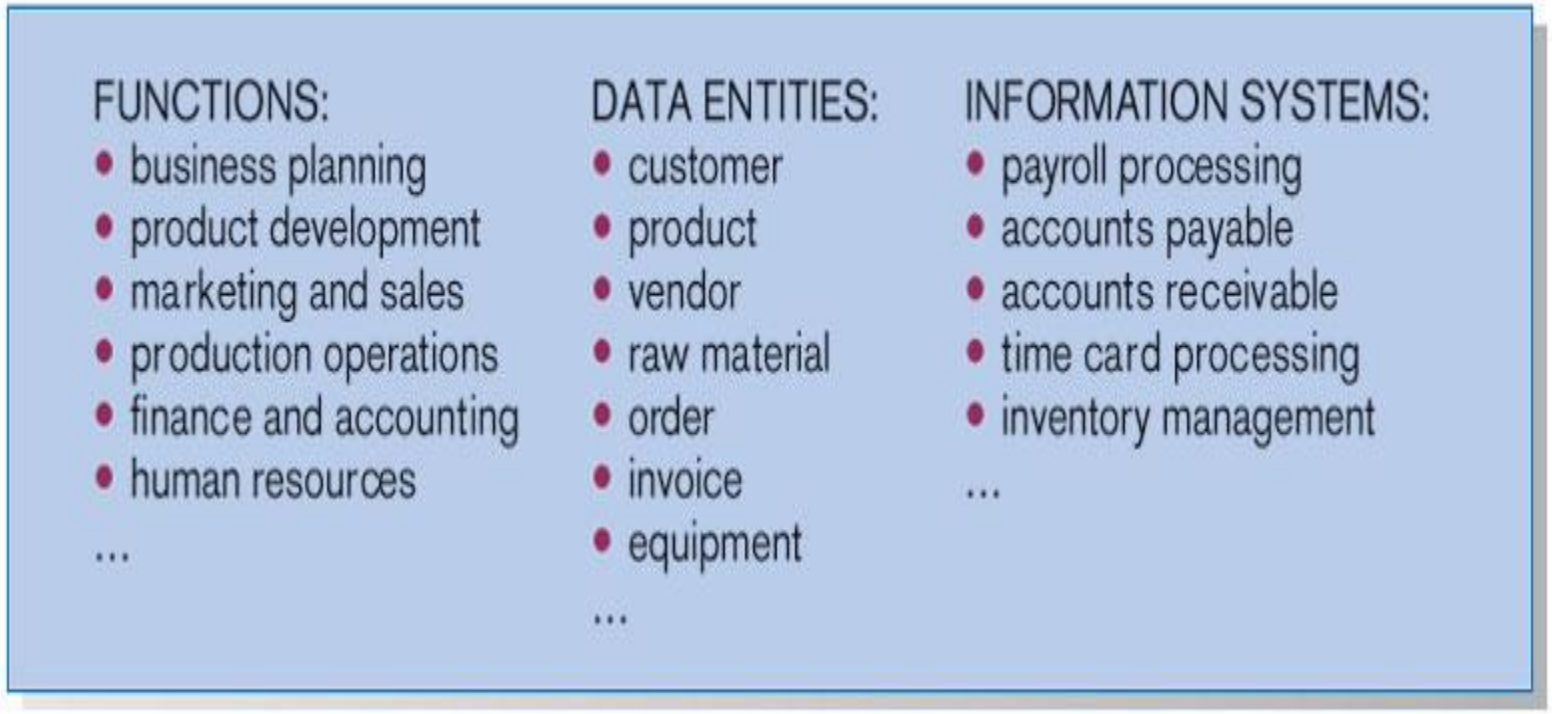
- After describing the current situation, the next step in the ISP (information system planning) process is to define the target situation that reflects the desired future state of the organization.
- This means that the target situation consists of the desired state of the locations, units, functions, processes, data, and IS.
- For example, if a desired future state of the organization is to have several new branch offices or a new product line that requires several new employee positions, functions, processes, and data, then most lists and matrices will need to be updated to reflect this vision. The target situation must be developed in light of technology and business trends, in addition to organizational constraints (something which controls what you do by keeping you within particular limits)

3. Developing a transition strategy and plans

- Once the creation of the current and target situations is complete, a detailed transition strategy and plan are developed by the IS planning team. This plan should be very comprehensive, reflecting broad, long range issues in addition to providing sufficient detail to guide all levels of management concerning what needs to be done, how, when, and by whom in the organization.
- The IS plan is typically a very comprehensive document that looks at both short- and long-term organizational development needs. The short- and long-term developmental needs identified in the plan are typically expressed as a series of projects.
- Projects from the long-term plan tend to build a foundation for later projects (such as transforming databases from old technology into newer technology). Projects from the short-term plan consist of specific steps to fill the gap between current and desired systems or respond to dynamic business conditions.
- The top-down (or plan-driven) projects join a set of bottom up or needs driven projects submitted as system service requests from managers to form the short-term systems development plan.

Identifying Functions, Processes, and Data Entities

Figure 4-11 Information systems planning information (Pine Valley Furniture)



IS Plan Components

1. Briefly describe mission, objectives, and strategy of the organization.
2. Provide summary of current and future processes, functions, data entities, and information needs of the enterprise
3. Describe primary role IS will play in the organization to transform enterprise from current to future state
4. Describe limitations imposed by technology and current levels of financial, technical, and personnel resources
5. Summarize overall information systems needs in the company and set long-term strategies for filling the needs
6. Show detailed inventory of present projects and systems and detailed plan for the current year
7. Describe unknown but likely events that can affect the plan, presently known business change elements, and description of their impact on the plan

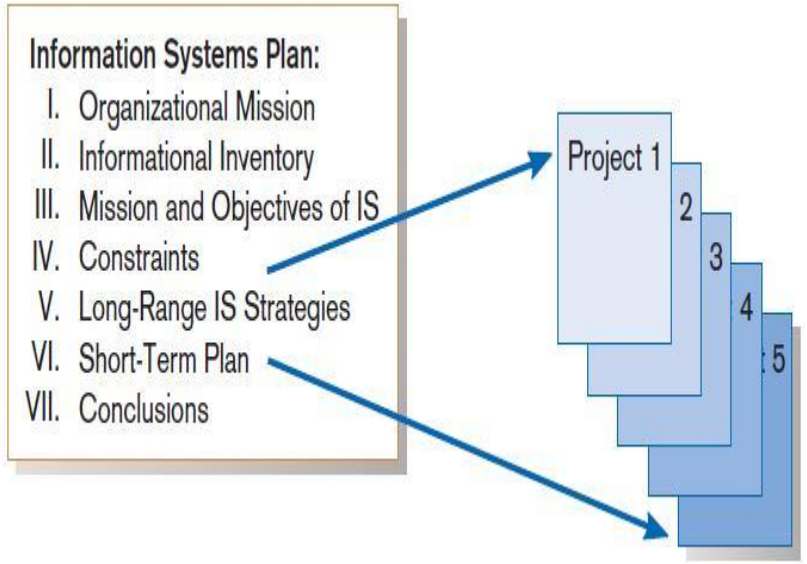


FIGURE
Systems development projects flow from the information systems plan

Electronic Commerce Applications

- The Internet
  - A large worldwide network of networks that use a common protocol to communicate with each other
- Electronic Commerce
  - Internet-based communications to support day-to-day business activities

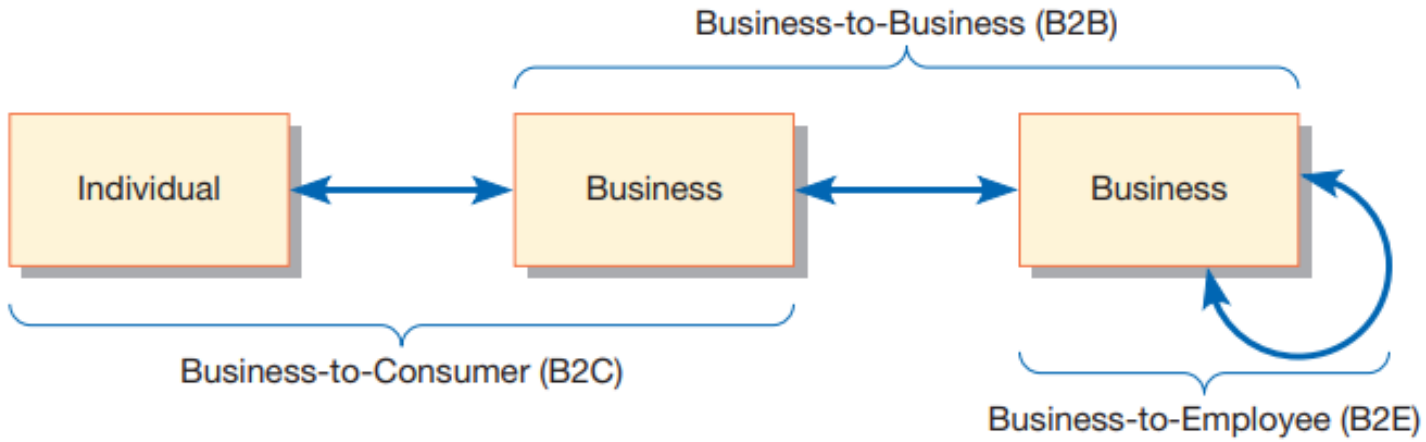


FIGURE 4-17
Three possible modes of electronic commerce

Three Modes of E-Commerce

- **Internet-based**
  - Supports business activities between a business and individual consumers
- **Intranet-based**
  - Supports business activities within a single organization
- **Extranet-based**
  - Supports business-to-business activities
  - A form of Electronic Data Interchange (EDI) – use of telecommunications for direct transfer of business documents between organizations

Issues in Internet Application Development

Table 4-5

Unknowns That Must Be Dealt with When Designing and Building Internet Applications

User	• Concern: Who is the user? • Example: Where is the user located? What is the user's expertise, education, or expectations?
Connection Speed	• Concern: What is the speed of the connection and what information can be effectively displayed? • Example: Modem, Cable Modem, DSL, Satellite, Broadband, Cellular
Access Method	• Concern: What is the method of accessing the net? • Example: Web browser, Personal Digital Assistant (PDA), Web-enabled Cellular Phone, Web-enabled Television

2.2 System development projects: Initiation and Planning

2.2.1 Introduction

2.2.2 Initiating and Planning Systems Development Projects

2.2.3 Process of Initiating and Planning IS Development Projects

2.2.4 Assessing Project Feasibility

2.2.5 Building and Receiving the Baseline Project Plan

2.2.1 Introduction

- During the first phase of the systems development life cycle (SDLC) planning, two primary activities are performed.
- **The first, project identification and selection**, focuses on the activities during which the need for a new or enhanced system is recognized.
- This activity does not deal with a specific project but rather identifies the portfolio of projects to be undertaken by the organization.
- Thus, project identification and selection is often thought of as a “pre project” step in the life cycle.
- This recognition of potential projects may come as part of a larger planning process, information systems planning, or from requests from managers and business units.

- Regardless of how a project is identified and selected, the next step is to conduct a **more detailed assessment** during project initiating and planning.
- This assessment does not focus on how the proposed system will operate but rather on understanding the **scope of a proposed project** and its **feasibility of completion** given the available resources.
- Project initiation and planning is where projects are accepted for development, rejected, or redirected.

2.2.2 INITIATING AND PLANNING SYSTEMS DEVELOPMENT PROJECTS

- A key consideration when conducting project initiation and planning (PIP) is deciding when PIP ends and when analysis, the next phase of the SDLC, begins.
- This is a concern because many activities performed during PIP could also be completed during analysis.
- Pressman (2014) speaks of three important questions that must be considered when making this decision on the division between PIP and analysis:

1. How much effort should be expended on the project initiation and planning process?

2. Who is responsible for performing the project initiation and planning process?

3. Why is project initiation and planning such a challenging activity?

1. How much effort should be expended on the project initiation and planning process?

- Finding an answer to the first question, how much effort should be expended on the PIP process, is often difficult.
- Practical experience has found, however, that the time and effort spent on initiation and planning activities easily pay for themselves later in the project.
- Proper and insightful project planning, including determining project scope as well as identifying project activities, can easily reduce time in later project phases.
- For example, a careful feasibility analysis that leads to deciding that a project is not worth pursuing can save a considerable expenditure of resources.
- The actual amount of time expended will be affected by the size and complexity of the project as well as by the experience of your organization in building similar systems.
- A rule of thumb is that between 10 and 20 percent of the entire development effort should be expended on the PIP study.
- Thus, you should not be reluctant to spend considerable time in PIP in order to fully understand the motivation for the requested system.

2. Who is responsible for performing the project initiation and planning process?

- For the second question, who is responsible for performing PIP, most organizations assign an experienced systems analyst, or a team of analysts for large projects, to perform PIP.
- The analyst will work with the proposed customers (managers and users) of the system and other technical development staff in preparing the final plan.
- Experienced analysts working with customers who fully understand their information services needs should be able to perform PIP without the detailed analysis typical of the analysis phase of the life cycle.
- Less-experienced analysts with customers who only vaguely understand their needs will likely expend more effort during PIP in order to be certain that the project scope and work plan are feasible.

3. Why is project initiation and planning such a challenging activity?

- As to the third question, PIP is viewed as a challenging activity because the objective of the PIP study is to transform a vague system request document into a tangible project description. This is an open-ended process.
- The analyst must clearly understand the motivation for and objectives of the proposed system. Therefore, effective communication among the systems analyst, users, and management is crucial to the creation of a meaningful project plan.
- Getting all parties to agree on the direction of a project may be difficult for cross-department projects where different parties have different business objectives.
- Thus, more complex organizational settings for projects will result in more time required for analysis of the current and proposed systems during PIP.

2.2.3 Process of initiating and planning IS development projects

- Project initiation focuses on activities designed to assist in organizing a team to conduct project planning.
- During initiation, one or more analysts are assigned to work with a customer—that is, a member of the business group that requested or will be affected by the project—to establish work standards and communication procedures.
- Depending upon the size, scope, and complexity of the project, some project initiation activities may be unnecessary or may be very involved.
- Also, many organizations have established procedures for assisting with common initiation activities. One key activity of project initiation is the development of the project charter.

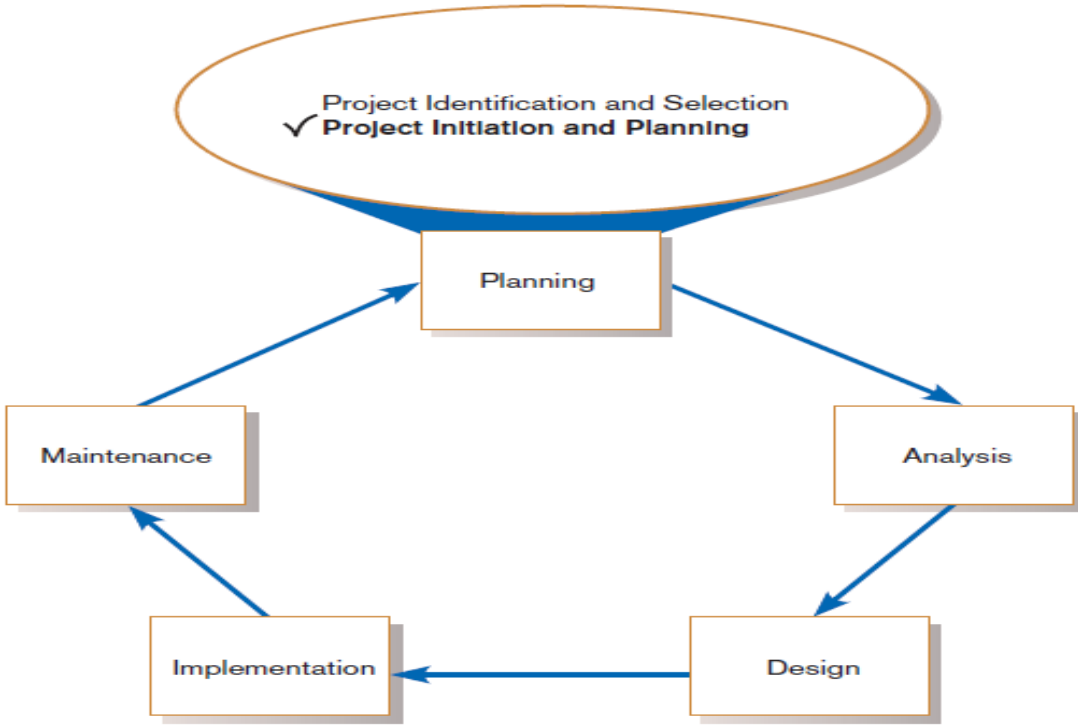


TABLE 5-1 Elements of Project Initiation

- Establishing the Project Initiation Team
- Establishing a Relationship with the Customer
- Establishing the Project Initiation Plan
- Establishing Management Procedures
- Establishing the Project Management Environment and Project Workbook
- Developing the Project Charter

FIGURE
Systems development life cycle with project initiation and planning highlighted

- Project planning, the second activity within PIP, is distinct from general information systems planning, which focuses on assessing the information systems needs of the entire organization.
- Project planning is the process of defining clear, discrete activities and the work needed to complete each activity within a single project.
- The objective of the project planning process is the development of a **Baseline Project Plan (BPP) and the Project Scope Statement (PSS).**
- The **BPP** becomes the foundation for the remainder of the development project.
- The **PSS** produced by the team clearly outlines the objectives and constraints of the project for the customer.

- As with the project initiation process, the size, scope, and complexity of a project will dictate the comprehensiveness of the project planning process and resulting documents.
- Further, numerous assumptions about resource availability and potential problems will have to be made.
- Analysis of these assumptions and system costs and benefits forms a business case.
- *Business case is the justification for an information system, presented in terms of the tangible and intangible economic benefits and costs and the technical and organizational feasibility of the proposed system.*
- *Baseline Project Plan (BPP) is a major outcome and deliverable from the project initiation and planning phase that contains the best estimate of a project's scope, benefits, costs, risks, and resource requirements.*

TABLE 5-2 Elements of Project Planning

- Describing the Project Scope, Alternatives, and Feasibility
- Dividing the Project into Manageable Tasks
- Estimating Resources and Creating a Resource Plan
- Developing a Preliminary Schedule
- Developing a Communication Plan
- Determining Project Standards and Procedures
- Identifying and Assessing Risk
- Creating a Preliminary Budget
- Developing the Project Scope Statement
- Setting a Baseline Project Plan

DELIVERABLES AND OUTCOMES

- The major outcomes and deliverables from the project initiation and planning phase are the **Baseline Project Plan** and the **Project Scope Statement**.
- The Baseline Project Plan (BPP) contains all information collected and analyzed during project initiation and planning.
- The plan reflects the best estimate of the project's scope, benefits, costs, risks, and resource requirements given the current understanding of the project.
- The BPP specifies detailed project activities for the next life cycle phase— analysis—and less detail for subsequent project phases (because these depend on the results of the analysis phase).
- Similarly, benefits, costs, risks, and resource requirements will become more specific and quantifiable as the project progresses.
- The BPP is used by the project selection committee to help decide whether the project should be accepted, redirected, or canceled.

- If selected, the BPP becomes the foundation document for all subsequent SDLC activities; however, it is also expected to evolve as the project evolves.
- That is, as new information is learned during subsequent SDLC phases, the baseline plan will be updated. Later in this chapter we describe how to construct the BPP.
- The Project Scope Statement (PSS) is a short document prepared for the customer that describes what the project will deliver and outlines all work required to complete the project.
- The PSS ensures that both you and your customer gain a common understanding of the project. It is also a very useful communication tool.
- The PSS is a very easy document to create because it typically consists of a high-level summary of the BPP information.

- Depending upon your relationship with your customer, the role of the PSS may vary.
- A contract programming or consulting firm, for example, may establish a very formal relationship with a customer and use a PSS that is extensive and formal.
- Alternatively, an internal development group may develop a PSS that is only one to two pages in length and is intended to inform customers rather than to set contractual obligations and deadlines.
- *Project Scope Statement (PSS) is a document prepared for the customer that describes what the project will deliver and outlines generally at a high level all work required to complete the project.*

2.2.4 Assessing Project Feasibility

- All projects are feasible given unlimited resources and infinite time.
- Unfortunately, most projects must be developed within tight budgetary and time constraints.
- This means that assessing project feasibility is a required activity for all information systems projects and is a potentially large undertaking.
- It requires that you, as a systems analyst, evaluate a wide range of factors.
- Typically, the relative importance of these factors will vary from project to project.

- Although the specifics of a given project will dictate which factors are most important, most feasibility factors are represented by the following categories:
- Economic
- Technical
- Operational
- Scheduling
- Legal and contractual
- Political

Feasibility Analysis

- Feasibility: The measure of how beneficial or practical an information system will be to an organization.
- **Feasibility analysis:** A feasibility analysis is the process by which feasibility is measured
- The scope and complexity of an apparently feasible project can change after the initial problems and opportunities are fully analyzed or after the system has been designed.
- A project that is feasible at one point in time may become infeasible at a later point in time
- A feasibility study assesses the operational, technical, and economic merits of the proposed project

Types of Feasibility Analysis

- **Operational feasibility** is a measure of how well the solution of problems or a specific solution will work in the organization. It is also a measure of how people feel about the system/project.
- **Technical feasibility** is a measure of the practicality of a specific technical solution and the availability of technical resources and expertise.
- **Schedule feasibility** is a measure of how reasonable the project timetable is.
- **Economic feasibility** is a measure of the cost-effectiveness of a project or solution. This is often called a *cost-benefit analysis*.

Assessing Economic Feasibility

- The purpose of assessing economic feasibility is to identify the financial benefits and costs associated with the development project
- Economic feasibility is often referred to as **cost–benefit analysis.**
- During project initiation and planning, it will be impossible for you to precisely define all benefits and costs related to a particular project.
- Yet it is important that you spend adequate time identifying and quantifying these items or it will be impossible for you to conduct an adequate economic analysis and make meaningful comparisons between rival projects.
- Here we will describe typical benefits and costs resulting from the development of an information system and provide several useful worksheets for recording costs and benefits. Additionally, several common techniques for making cost–benefit calculations are presented.
- These worksheets and techniques are used after each SDLC phase as the project is reviewed in order to decide whether to continue, redirect, or kill a project.

Determining Project Benefits

- An information system can provide many benefits to an organization.
- For example, a new or renovated information system can automate monotonous jobs and reduce errors; provide innovative services to customers and suppliers; and improve organizational efficiency, speed, flexibility, and morale.
- In general, the benefits can be viewed as being both tangible and intangible.
- **Tangible** benefits refer to items that can be measured in dollars and with certainty. Examples of tangible benefits might include reduced personnel expenses, lower transaction costs, or higher profit margins.

- Most tangible benefits will fit within the following categories:
    - Cost reduction and avoidance
    - Error reduction
    - Increased flexibility
    - Increased speed of activity
    - Improvement of management planning and control
    - Opening new markets and increasing sales opportunities
- *Tangible benefit A benefit derived from the creation of an information system that can be measured in dollars and with certainty*

- **Intangible** benefits refer to items that cannot be easily measured in dollars or with certainty.
- Intangible benefits may have direct organizational benefits, such as the improvement of employee morale, or they may have broader societal implications, such as the reduction of waste creation or resource consumption.
- Potential tangible benefits may have to be considered intangible during project initiation and planning because you may not be able to quantify them in dollars or with certainty at this stage in the life cycle.
- During later stages, such intangibles can become tangible benefits as you better understand the ramifications of the system you are designing.
- In this case, the BPP is updated and the business case revised to justify continuation of the project to the next phase.
- *Intangible benefit A benefit derived from the creation of an information system that cannot be easily measured in dollars or with certainty*

TABLE 5-3 Intangible Benefits from the Development of an Information System

- Competitive necessity
- More timely information
- Improved organizational planning
- Increased organizational flexibility
- Promotion of organizational learning and understanding
- Availability of new, better, or more information
- Ability to investigate more alternatives
- Faster decision making
- More confidence in decision quality
- Improved processing efficiency
- Improved asset utilization
- Improved resource control
- Increased accuracy in clerical operations
- Improved work process that can improve employee morale or customer satisfaction
- Positive impacts on society
- Improved social responsibility
- Better usage of resources ("greener")

(Source: Based on Parker and Benson, 1988; Brynjolfsson and Yang, 1997; Keen, 2003; Cresswell, 2004.)

Determining Project Costs

- Similar to benefits, an information system can have both tangible and intangible costs.
- **Tangible** costs refer to items that you can easily measure in dollars and with certainty.
- From an IS development perspective, tangible costs include items such as hardware costs, labor costs, and operational costs including employee training and building renovations.
- Alternatively, **intangible** costs are items that you cannot easily measure in terms of dollars or with certainty.
- Intangible costs can include loss of customer goodwill, employee morale, or operational inefficiency.
- One goal of a cost–benefit analysis is to accurately determine the total cost of ownership (TCO) for an investment.
- TCO is focused on understanding not only the total cost of acquisition but also all costs associated with ongoing use and maintenance of a system.
- *Total cost of ownership (TCO) The cost of owning and operating a system, including the total cost of acquisition, as well as all costs associated with its ongoing use and maintenance.*

- **One-time costs** refer to those associated with project initiation and development and the start-up of the system. These costs typically encompass activities such as systems development, new hardware and software purchases, user training, site preparation, and data or system conversion.
- When conducting an economic cost–benefit analysis, a worksheet should be created for capturing these expenses. For very large projects, one-time costs may be staged over one or more years. In these cases, a separate onetime cost worksheet should be created for each year. This separation will make it easier to perform present value calculations.
- **Recurring costs** refer to those costs resulting from the ongoing evolution and use of the system. Examples of these costs typically include the following:

  - Application software maintenance
  - Incremental data storage expenses
  - Incremental communications
  - New software and hardware leases
  - Supplies and other expenses (e.g., paper, forms, data center personnel)

ONE-TIME COSTS WORKSHEET
Customer Tracking System Project

	Year 0
A. Development costs	$20,000
B. New hardware	15,000
C. New (purchased) software, if any	
1. Packaged applications software	5,000
2. Other _____	0
D. User training	2,500
E. Site preparation	0
F. Other _____	0
TOTAL one-time costs	$42,500

Figure
One-time costs for Customer Tracking System (Pine Valley Furniture)

RECURRING COSTS WORKSHEET
Customer Tracking System Project

	Year 1 through 5
A. Application software maintenance	$25,000
B. Incremental data storage required: 20 GB × $50 (estimated cost/MB = $50)	1000
C. Incremental communications (lines, messages, . . .)	2000
D. New software or hardware leases	0
E. Supplies	500
F. Other _____	0
TOTAL recurring costs	$28,500

Figure
Recurring costs for Customer Tracking System (Pine Valley Furniture)

- Both one-time and recurring costs can consist of items that are fixed or variable in nature.
- ***Fixed costs*** are billed or incurred at a regular interval and usually at a fixed rate.
  - Example: facility lease payment
- ***Variable costs*** are items that vary in relation to usage.
  - Example: long-distance charges

TABLE 5-4 Possible Information Systems Costs

Type of Cost	Examples	Type of Cost	Examples
Procurement	Hardware, software, facilities infrastructure	Project	Infrastructure replacement/ improvements
	Management and staff		Project personnel
	Consulting and services		Training
			Development activities
			Services and procurement
			Organizational disruptions
			Management and staff
Start-Up	Initial operating costs	Operating	Infrastructure replacement/ improvements
	Management and staff		System maintenance
	Personnel recruiting		Management and staff
			User training and support

(*Source:* Based on King and Schrems, 1978; Sonje, 2008.)

TABLE 5-5 Guidelines for Better Cost Estimating

1. Have clear guidelines for creating estimates.
2. Use experienced developers and/or project managers for making estimates.
3. Develop a culture where all project participants are responsible for defining accurate estimates.
4. Use historical data to help in establishing better estimates of costs, risks, schedules, and resources.
5. Update estimates as the project progresses.
6. Monitor progress and record discrepancies to improve future estimates.

(*Source*: Based on Lederer and Prasad, 1992; Hubbard, 2007; Sonje, 2008.)

The Time Value of Money(TVM)

- Most techniques used to determine economic feasibility encompass the concept of the time value of money (TVM), which reflects the notion that money available today is worth more than the same amount tomorrow.
- As previously discussed, the development of an information system has both one-time and recurring costs. Furthermore, benefits from systems development will likely occur sometime in the future.
- Because many projects may be competing for the same investment dollars and may have different useful life expectancies, all costs and benefits must be viewed in relation to their present value when comparing investment options.

Example of TVM

- A simple example will help in understanding the TVM.
- Suppose you want to buy a used car from an acquaintance and she asks that you make three payments of $1500 for three years, beginning next year, for a total of $4500. If she would agree to a single lump-sum payment at the time of sale (and if you had the money!), what amount do you think she would agree to? Should the single payment be $4500? Should it be more or less? To answer this question, we must consider the time value of money. Most of us would gladly accept $4500 today rather than three payments of $1500, because a dollar today (or $4500 for that matter) is worth more than a dollar tomorrow or next year, given that money can be invested.

Definitions of Terms

- **Time value of money** (**TVM**): the concept that money available today is worth more than the same amount tomorrow
- **Discount rate**: the rate of return used to compute the present value of future cash flows (*the cost of capital*)
- **Present value**: the current value of a future cash flow

- **Net Present Value**
  - PVn = *present value* of Y dollars n years from now based on a *discount rate* of i.
  - NPV = sum of PVs across years.
  - Calculates *time value of money*

$$\mathrm{PV}_n = Y \times \frac{1}{(1+i)^n}$$

Break-even analysis

- The objective of the break-even analysis is to discover at what point (if ever) benefits equal costs (i.e., when breakeven occurs)
- To conduct this analysis, the NPV of the yearly cash flows are determined.
- Here, the yearly cash flows are calculated by subtracting both the one-time cost and the present values of the recurring costs from the present value of the yearly benefits.
- The overall NPV of the cash flow reflects the total cash flows for all preceding years.

$$\text{Break-Even Ratio} = \frac{\text{Yearly NPV Cash Flow} - \text{Overall NPV Cash Flow}}{\text{Yearly NPV Cash Flow}}$$

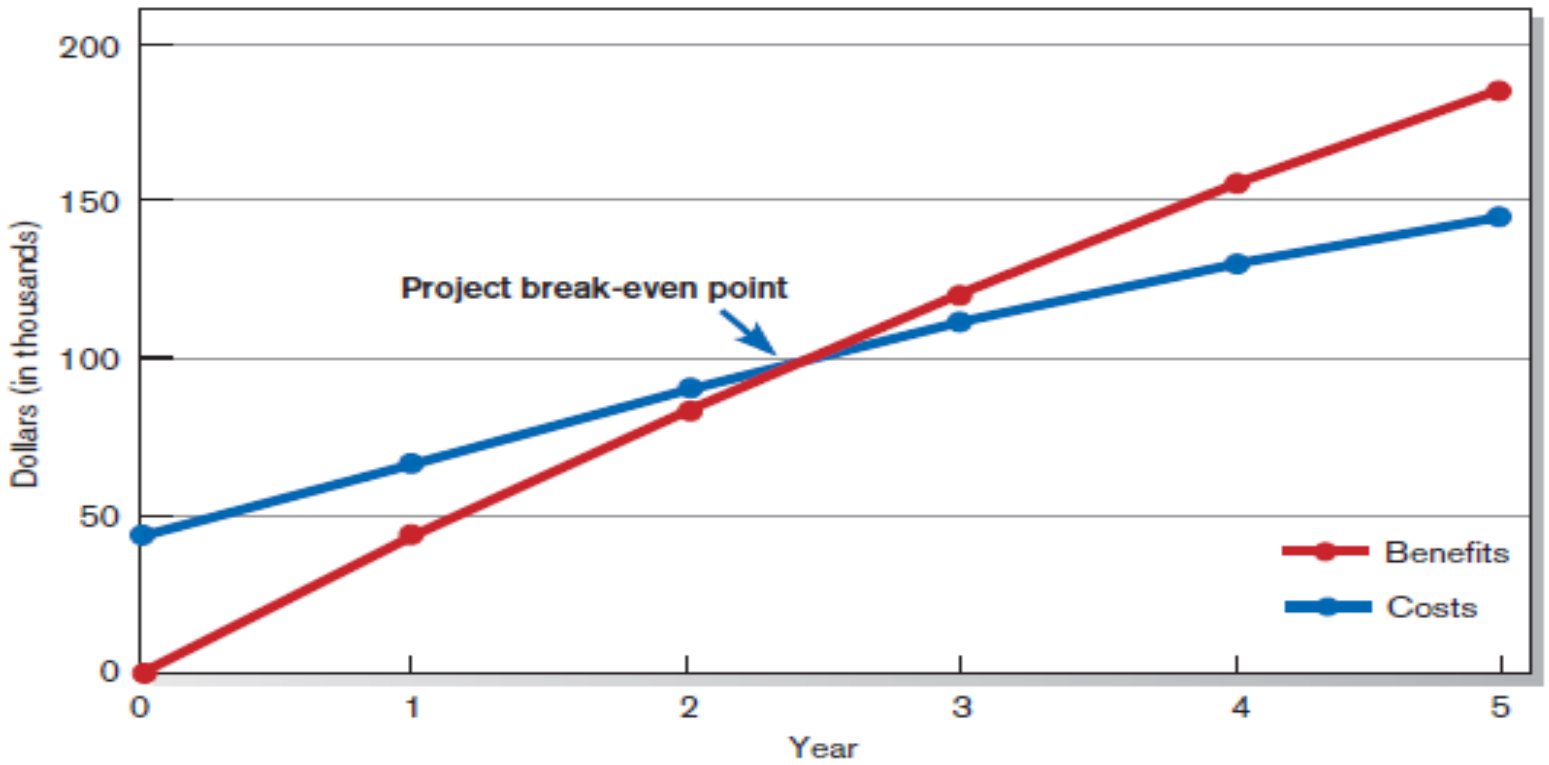


Figure
Break-even analysis for Customer Tracking System (Pine Valley Furniture)

Three Financial Measurements for Economic Feasibility

- **Net Present Value (NPV):** Use discount rate to determine present value of cash outlays and receipts
- **Return on Investment (ROI):** Ratio of cash receipts to cash outlays
- **Break-Even Analysis (BEA):** Amount of time required for cumulative cash flow to equal initial and ongoing investment

TABLE 5-6 Commonly Used Economic Cost–Benefit Analysis Techniques

Analysis Technique	Description
Net Present Value (NPV)	NPV uses a discount rate determined from the company's cost of capital to establish the present value of a project. The discount rate is used to determine the present value of both cash receipts and outlays.
Return on Investment (ROI)	ROI is the ratio of the net cash receipts of the project divided by the cash outlays of the project. Trade-off analysis can be made among projects competing for investment by comparing their representative ROI ratios.
Break-Even Analysis (BEA)	BEA finds the amount of time required for the cumulative cash flow from a project to equal its initial and ongoing investment.

Assessing Technical Feasibility

- The purpose of assessing technical feasibility is to gain an understanding of the organization's ability to construct the proposed system.
- This analysis should include an assessment of the development group's understanding of the possible target hardware, software, and operating environments to be used, as well as system size, complexity, and the group's experience with similar systems.
- It is important to note that all projects have risk and that risk is not necessarily something to avoid. Yet it is also true that, because organizations typically expect a greater return on their investment for riskier projects, understanding the sources and types of technical risks proves to be a valuable tool when you assess a project.

- The potential consequences of not assessing and managing risks can include the following:
  - Failure to attain expected benefits from the project
  - Inaccurate project cost estimates.
  - Inaccurate project duration estimates.
  - Failure to achieve adequate system performance levels.
  - Failure to adequately integrate the new system with existing hardware, software, or organizational procedures.
- The amount of technical risk associated with a given project is dependent on four primary factors: project size, project structure, the development group's experience with the application and technology area, and the user group's experience with systems development projects and the application area.

Four general rules emerged as technical risk assessments:

- Large projects are riskier than small projects.
- A system in which the requirements are easily obtained and highly structured will be less risky than one in which requirements are messy, ill-structured, ill-defined, or subject to the judgment of an individual
- The development of a system employing commonly used or standard technology will be less risky than one employing novel (a long printed story about imaginary characters and events) or nonstandard technology.
- A project is less risky when the user group is familiar with the systems development process and application area than if the user group is unfamiliar with them.

Assessing Operational feasibility

- Its purpose is to gain an understanding of the degree to which the proposed system will likely solve the business problems or take advantage of the opportunities outlined in the **System Service Request** or project identification study.
- For a project motivated from information systems planning, operational feasibility includes justifying the project on the basis of being consistent with or necessary for accomplishing the information systems plan.
- Your assessment of operational feasibility should include an analysis of how the proposed system will affect organizational structures and procedures.
- Systems that have substantial and widespread impact on an organization’s structure or procedures are typically riskier projects to undertake. Thus, it is important for you to have a clear understanding of how an information system will fit into the current day-to-day operations of the organization.

Assessing Schedule Feasibility

- Another feasibility concern relates to project duration is assessing schedule feasibility. The purpose of assessing schedule feasibility is for you, as a systems analyst, to gain an understanding of all potential time frames and completion date schedules can be met and that meeting these dates will be sufficient for dealing with the needs of the organization.
- Further, detailed activities may only be feasible if resources are available when called for in the schedule. For example, the schedule should not call for system testing during rushed business periods or for key project meetings during annual vacation or holiday periods.
- The schedule of activities produced during project initiation and planning will be very precise and detailed for the analysis phase. The estimated activities and associated times for activities after the analysis phase are typically not as detailed (e.g., it will take two weeks to program the payroll report module) as the life-cycle-phase level (e.g., it will take six weeks for physical design, four months for programming, and so on).

- This means that assessing schedule feasibility during project initiation and planning is more of a “rough-cut” analysis of whether the system can be completed within the constraints of the business opportunity or the desires of the users.
- While assessing schedule feasibility you should also evaluate scheduling trade-offs. For example, factors such as project team size, availability of key personnel, subcontracting or outsourcing activities, and changes in development environments may all be considered as having a possible impact on the eventual schedule.
- As with all forms of feasibility, schedule feasibility will be reassessed after each phase when you can specify with greater certainty the details of each step for the next phase

Assessing Legal and Contractual Feasibility

- A third concern relates to assessing legal and contractual feasibility issues. In this area, you need to gain an understanding of any potential legal ramifications (the possible results of an action) due to the construction of the system.
- Possible considerations might include copyright or nondisclosure infringements (an action that breaks a rule, law, etc), labor laws, antitrust legislation (which might limit the creation of systems to share data with other organizations), foreign trade regulations (e.g., some countries limit access to employee data by foreign corporations), and financial reporting standards, as well as current or pending contractual obligations.
- Contractual obligations may involve ownership of software used in joint ventures, license agreements for use of hardware or software, nondisclosure agreements with partners, or elements of a labor agreement (e.g., a union agreement may preclude certain compensation or work-monitoring capabilities a user may want in a system).

Assessing Political Feasibility

- A final feasibility concern focuses on assessing political feasibility in which you attempt to gain an understanding of how key stakeholders within the organization view the proposed system.
- Because information system may affect the distribution of information within the organization, and thus the distribution of power, the construction of an information system can have political ramifications. Those stakeholders not supporting the project may take steps to block, disrupt, or change the intended focus of the project.

2.2.5 Building and Receiving the Baseline Project Plan

- All the information collected during project initiation and planning is collected and organized into a document called the Baseline Project Plan.
- Once the BPP is completed, a formal review of the project can be conducted with project clients and other interested parties.
- This presentation, a walk-through, is discussed later in this chapter.
- The focus of this review is to verify all information and assumptions in the baseline plan before moving ahead with the project.

Figure 5-10 Outline of a Baseline Project Plan

BASELINE PROJECT PLAN REPORT

1.0 Introduction
- A. Project Overview—Provides an executive summary that specifies the project's scope, feasibility, justification, resource requirements, and schedules. Additionally, a brief statement of the problem, the environment in which the system is to be implemented, and constraints that affect the project are provided.
- B. Recommendation—Provides a summary of important findings from the planning process and recommendations for subsequent activities.

2.0 System Description
- A. Alternatives—Provides a brief presentation of alternative system configurations.
- B. System Description—Provides a description of the selected configuration and a narrative of input information, tasks performed, and resultant information.

3.0 Feasibility Assessment
- A. Economic Analysis—Provides an economic justification for the system using cost-benefit analysis.
- B. Technical Analysis—Provides a discussion of relevant technical risk factors and an overall risk rating of the project.
- C. Operational Analysis—Provides an analysis of how the proposed system solves business problems or takes advantage of business opportunities in addition to an assessment of how current day-to-day activities will be changed by the system.
- D. Legal and Contractual Analysis—Provides a description of any legal or contractual risks related to the project (e.g., copyright or nondisclosure issues, data capture or transferring, and so on).
- E. Political Analysis—Provides a description of how key stakeholders within the organization view the proposed system.
- F. Schedules, Time Line, and Resource Analysis—Provides a description of potential time frame and completion date scenarios using various resource allocation schemes.

4.0 Management Issues
- A. Team Configuration and Management—Provides a description of the team member roles and reporting relationships.
- B. Communication Plan—Provides a description of the communication procedures to be followed by management, team members, and the customer.
- C. Project Standards and Procedures—Provides a description of how deliverables will be evaluated and accepted by the customer.
- D. Other Project-Specific Topics—Provides a description of any other relevant issues related to the project uncovered during planning.

Baseline Project Plan (BPP) is a document intended primarily to guide the development team.

Sections:

1) **Introduction**
2) **System description**
3) **Feasibility assessment**
4) **Management issues**

1.0 Introduction

A. Project Overview—Provides an executive summary that specifies the project's scope, feasibility, justification, resource requirements, and schedules. Additionally, a brief statement of the problem, the environment in which the system is to be implemented, and constraints that affect the project are provided.

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D. Other Project-Specific Topics—Provides a description of any other relevant issues related to the project uncovered during planning.

Figure 5-11 Statement of project scope (Pine Valley Furniture)

Pine Valley Furniture
Statement of Project Scope

Prepared by: Jim Woo
Date: September 12, 2005

General Project Information

Project Name:	Customer Tracking System
Sponsor:	Jackie Judson, VP Marketing
Project Manager:	Jim Woo

Problem/Opportunity Statement:
Sales growth has outpaced the Marketing department's ability to accurately track and forecast customer buying trends. An improved method for performing this process must be found in order to reach company objectives.

Project Objectives:
To enable the Marketing department to accurately track and forecast customer buying patterns in order to better serve customers with the best mix of products. This will also enable PVF to identify the proper application of production and material resources.

Project Description:
A new information system will be constructed that will collect all customer purchasing activity, support display and reporting of sales information, aggregate data, and show trends in order to assist marketing personnel in understanding dynamic market conditions. The project will follow PVF's systems development life cycle.

Business Benefits:
Improved understanding of customer buying patterns
Improved utilization of marketing and sales personnel
Improved utilization of production and materials

Project Deliverables:
Customer tracking system analysis and design
Customer tracking system programs
Customer tracking documentation
Training procedures

Estimated Project Duration:
5 months

Project Scope statement is part of the BPP introduction.

Sections:

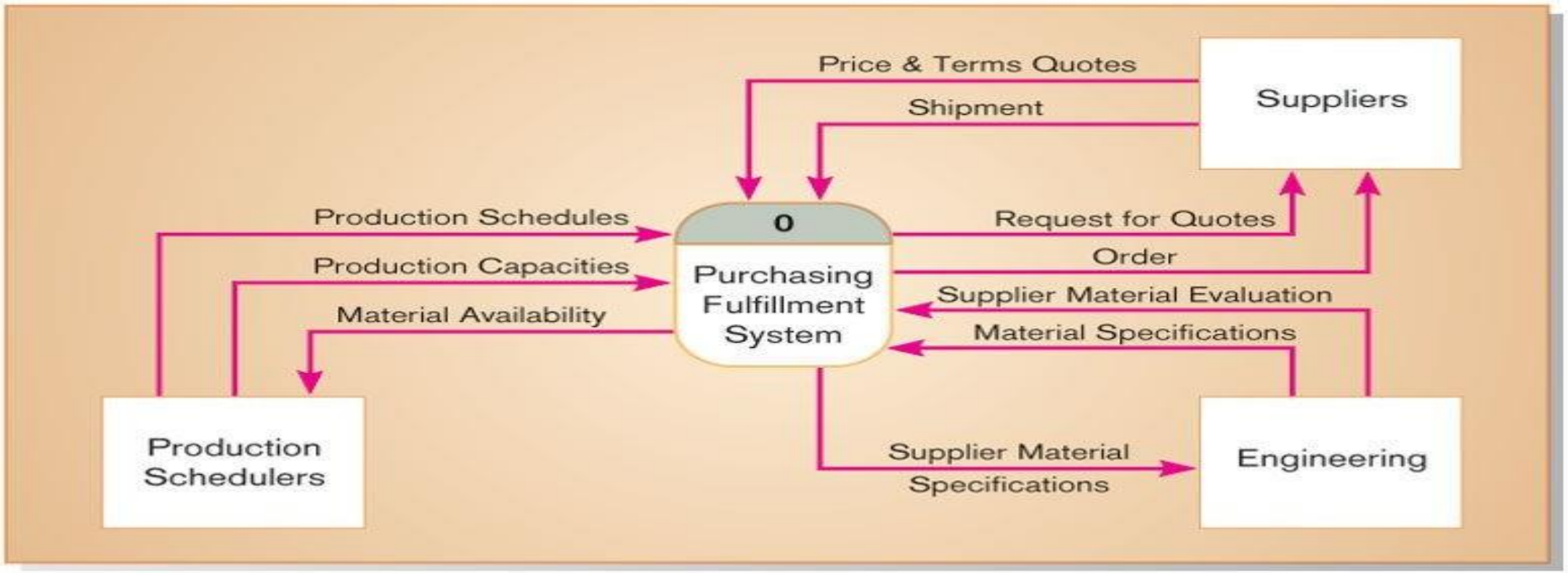
1) **Problem statement**
2) **Project objectives**
3) **Project description**
4) **Business benefits**
5) **Deliverables**
6) **Expected duration**

Factors in Determining Scope

- Organizational units affected by new system
- Current systems that will interact with or change because of new system
- People who are affected by new system
- Range of potential system capabilities

Diagram Depiction of Project Scope

Figure 5-12 Context-level data flow diagram showing project scope for Purchasing Fulfillment System (Pine Valley Furniture)



- *System description* section outlines possible alternative solutions.
- *Feasibility assessment* section outlines issues related to project costs and benefits, technical difficulties, and other such concerns.
- *Management issues* section outlines a number of managerial concerns related to the project.

Reviewing the Baseline Project Plan

- Before the next phase of the SDLC can begin, the users, management, and development group must review the BPP in order to verify that it makes sense. This review takes place before the BPP is submitted or presented to a project approval body, such as an IS steering committee or the person who must fund the project.
- The objective of this review is to ensure that the proposed system conforms to organizational standards and that all relevant parties understand and agree with the information contained in the BPP. A common method for performing this review (as well as reviews during subsequent life cycle phases) is called a **structured walk-through.**

Structured Walkthroughs

- A peer-group review of any product created during the system development process
- Experience has shown that walk-throughs are a very effective way to ensure the quality of an information system and have become a common day-to-day activity for many systems analysts
- Roles: coordinator, presenter, user, secretary, standard-bearer, maintenance oracle
- Can be applied to BPP, system specifications, logical and physical designs, program code, test procedures, manuals and documentation

Roles

- **Coordinator.** This person plans the meeting and facilitates a smooth meeting process. This person may be the project leader or a lead analyst responsible for the current life cycle step.
- **Presenter.** This person describes the work product to the group. The presenter is usually an analyst who has done all or some of the work being presented.
- **User**. This person (or group) makes sure that the work product meets the needs of the project's customers. This user would usually be someone not on the project team.
- **Secretary.** This person takes notes and records decisions or recommendations made by the group. This may be a clerk assigned to the project team or it may be one of the analysts on the team.

- **Standards bearer.** The role of this person is to ensure that the work product adheres to organizational technical standards. Many larger organizations have staff groups within the unit responsible for establishing standard procedures, methods, and documentation formats. These standards bearers validate the work so that it can be used by others in the development organization.
- **Maintenance oracle.** This person reviews the work product in terms of future maintenance activities. The goal is to make the system and its documentation easy to maintain.

Figure 5-13 Walkthrough review form (Pine Valley Furniture)

Pine Valley Furniture
Walkthrough Review Form

Session Coordinator:

Project/Segment:

Coordinator's Checklist:

1. Confirmation with producer(s) that material is ready and stable: _____
2. Issue invitations, assign responsibilities, distribute materials: [ ] Y [ ] N
3. Set date, time, and location for meeting:

Date: ____ /____ /____ Time: _____ A.M. / P.M. (circle one)

Location: _____

Responsibilities	Participants	Can Attend	Received Materials
Coordinator	_____	[ ] Y [ ] N	[ ] Y [ ] N
Presenter	_____	[ ] Y [ ] N	[ ] Y [ ] N
User	_____	[ ] Y [ ] N	[ ] Y [ ] N
Secretary	_____	[ ] Y [ ] N	[ ] Y [ ] N
Standards	_____	[ ] Y [ ] N	[ ] Y [ ] N
Maintenance	_____	[ ] Y [ ] N	[ ] Y [ ] N

Agenda:

_____ 1. All participants agree to follow PVF's Rules of a Walkthrough
_____ 2. New material: walkthrough of all material
_____ 3. Old material: item-by-item checkoff of previous action list
_____ 4. Creation of new action list (contribution by each participant)
_____ 5. Group decision (see below)
_____ 6. Deliver copy of this form to the project control manager

Group Decision:

_____ Accept product as-is
_____ Revise (no further walkthrough)
_____ Review and schedule another walkthrough

Signatures		

TABLE 5-8 Guidelines for Making an Effective Presentation

Presentation Planning	
Who is the audience?	To design the most effective presentation, you need to consider the audience (e.g., What do they know about your topic? What is their education level?).
What is the message?	Your presentation should be designed with a particular objective in mind.
What is the presentation environment?	Knowledge of the room size, shape, and lighting is valuable information for designing an optimal presentation.
Presentation Design	
Organize the sequence.	Organize your presentation so that like elements or topics are found in one place, instead of scattered throughout the material in random fashion.
Keep it simple.	Make sure that you don't pack too much information onto a slide so that it is difficult to read. Also, work to have as few slides as possible; in other words, only include information that you absolutely need.
Be consistent.	Make sure that you are consistent in the types of fonts, font sizes, colors, design approach, and backgrounds.
Use variety.	Use both textual and graphical slides to convey information in the most meaningful format.
Don't rely on the spell checker alone.	Make sure you carefully review your presentation for typographical and wording errors.
Use bells and whistles sparingly.	Make sure that you use familiar graphical icons to guide and enhance slides; don't lose sight of your message as you add bells and whistles. Also, take great care when making transitions between slides and elements so that "special effects" don't take away from your message.
Use supplemental materials appropriately.	Take care when using supplemental materials so that they don't distract the audience. For example, don't provide handouts until you want the audience to actually read this material.
Have a clear beginning and end.	At the beginning, introduce yourself and your teammates (if any), thank your audience for being there, and provide a clear outline of what will be covered during the presentation. At the conclusion, have a concluding slide so that the audience clearly sees that the presentation is over.
Presentation Delivery	
Practice.	Make sure that you thoroughly test your completed work on yourself and others to be sure it covers your points and presents them in an effective manner within the time frame required.
Arrive early and cue up your presentation.	It is good practice, when feasible, to have your presentation ready to go prior to the arrival of the audience.
Learn to use the "special" software keys.	Using special keys to navigate the presentation will allow you to focus on your message and not on the software.
Have a backup plan.	Have a backup plan in case technology fails or your presentation is lost when traveling.
Deliver the information effectively.	To make an effective presentation, you must become an effective public speaker through practice.
Personal appearance matters.	Your appearance and demeanor can go a long way toward enhancing how the audience receives your presentation.

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