Hall Of the Frame

1) Jeshika
2) Bisham Shrestha

Unit Two
Planning

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.

IDENTIFYING AND SELECTING SYSTEMS DEVELOPMENT

Learning outcome of this chapter

- After studying this chapter, you should be able to

- Describe the project identification and selection process,

- Describe the corporate strategic planning and information systems planning process, and

- Describe the three classes of Internet electronic commerce applications: business-to-consumer, business-to-employee, and business-to-business.
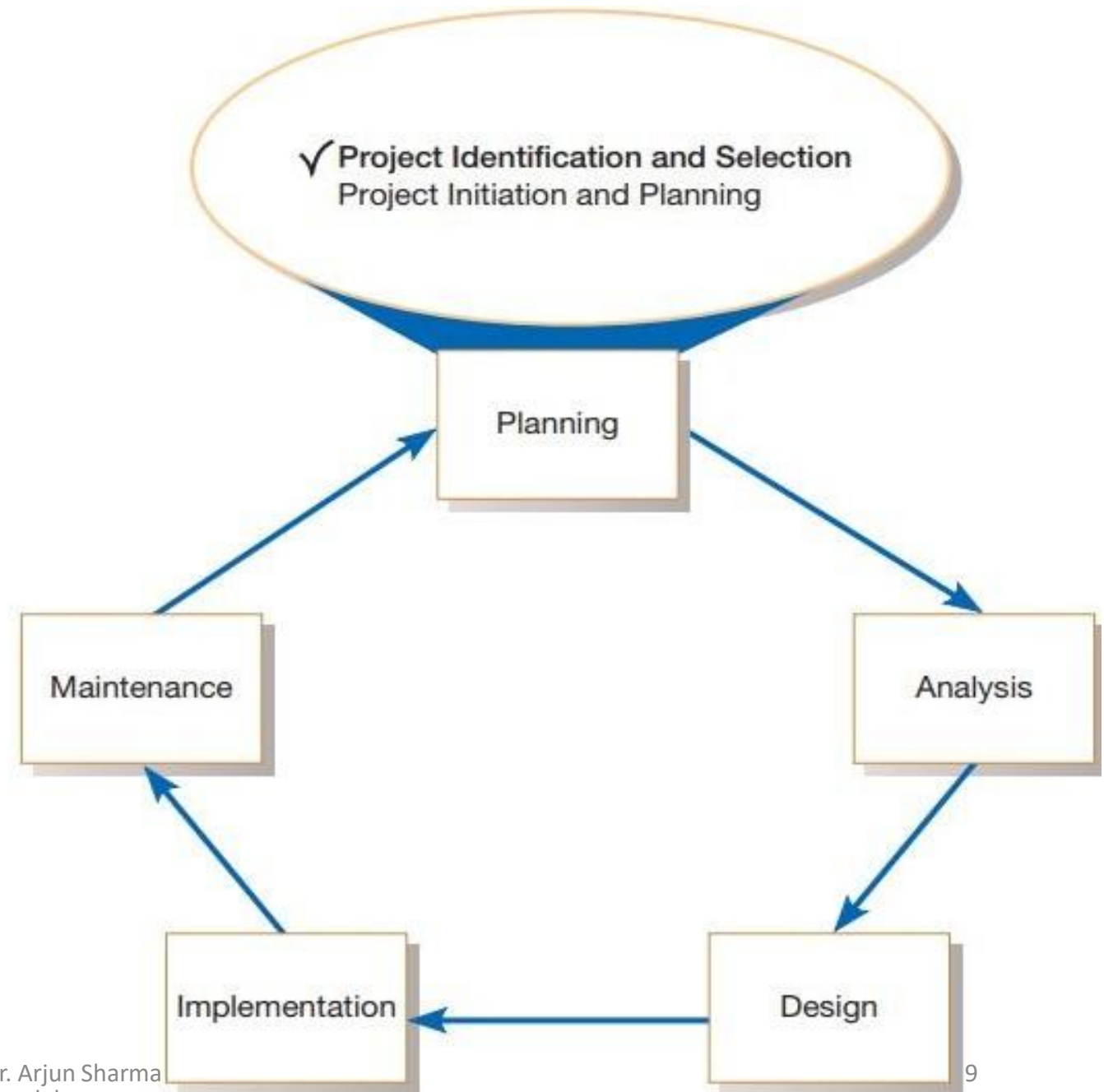
After a few minutes of study in SAD Class

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.

Er. Arjun Sharma Poudel

8

✓ **Project Identification and Selection**
Project Initiation and Planning

Planning

Maintenance

Analysis

Implementation

Design

FIGURE 4-1
Systems development life cycle with project identification and selection highlighted

Er. Arjun Sharma Poudel

9

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.

- In the following slides, we 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.

- Other factors, such as project cost, duration, complexity, and risk, are also influenced by the source of a given project.

- Characteristics of each selection method are briefly summarized in Table in next slide

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

- 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.

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.

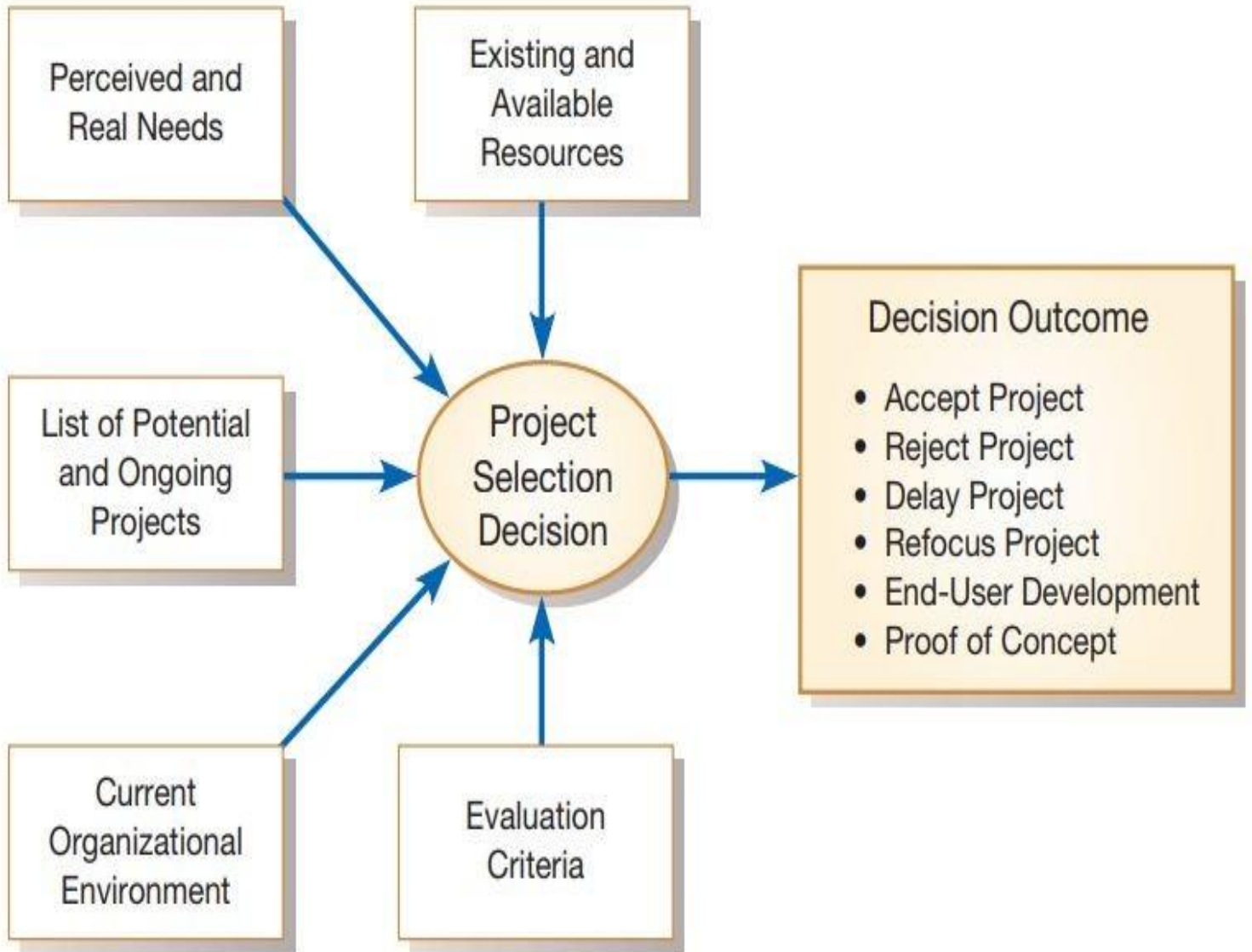# 3. Selecting IS Development Projects

- 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 4-3 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 4-3

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

Perceived and Real Needs

Existing and Available Resources

List of Potential and Ongoing Projects

Project Selection Decision

Current Organizational Environment

Evaluation Criteria

Decision Outcome

- Accept Project
- Reject Project
- Delay Project
- Refocus Project
- End-User Development
- Proof of Concept

Mujhe ghar jaana hai

- One method for deciding among different projects, or when considering alternative designs for a given system, is illustrated in Figure 4-4.

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

Er. Arjun Sharma Poudel

Activate Windows
Go to Settings to activate Windows

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.
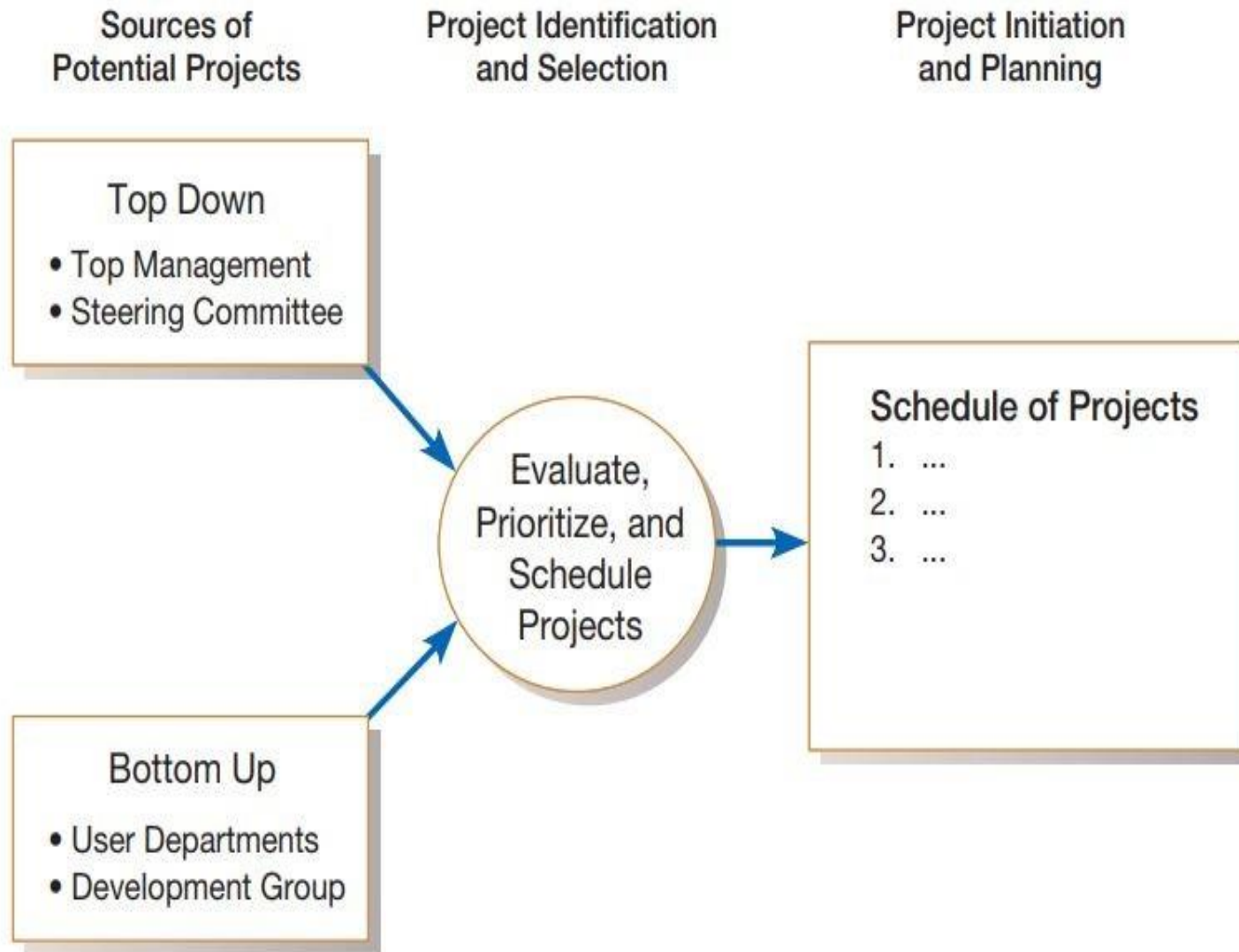
Incremental commitment

A strategy in systems analysis and design in which the project is reviewed after each phase and continuation of the project is rejustified.

- Due to the principle of **incremental commitment**, a selected project does not necessarily result in a working system.

- 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.

Sources of Potential Projects

Top Down
- Top Management
- Steering Committee

Bottom Up
- User Departments
- Development Group

Project Identification and Selection

Evaluate, Prioritize, and Schedule Projects

Project Initiation and Planning

Schedule of Projects
1. ...
2. ...
3. ...

FIGURE 4-5

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

- 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.

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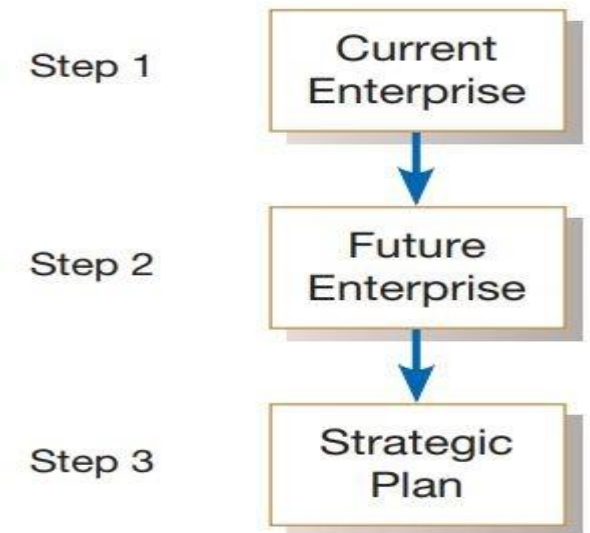
FIGURE 4-6
Corporate strategic planning is a three-step process

- 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.

- 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.*

When you have to keep reading the same paragraph because you cant't focus

- 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.*

- 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._

- For example, Rolls-Royce and Kia Motors are two car lines with different strategies: One is a high-prestige line in the ultra-luxury niche, whereas the other is a relatively low-priced line for the general automobile market.

- Rolls-Royce may build information systems to collect and analyze information on customer satisfaction to help manage a key company objective.

- Alternatively, Kia may build systems to track plant and material utilization in order to manage activities related to its low-cost strategy.

- To effectively deploy resources such as the creation of a marketing and sales organization or to build the most effective information systems, an organization must clearly understand its mission, objectives, and strategy.

- From an information systems development perspective, by understanding which activities are most critical for achieving business objectives, an organization has a much greater chance to identify those activities that need to be supported by information systems.

- In other words, it is only through the clear understanding of the organizational mission, objectives, and strategies that IS development projects should be identified and selected.
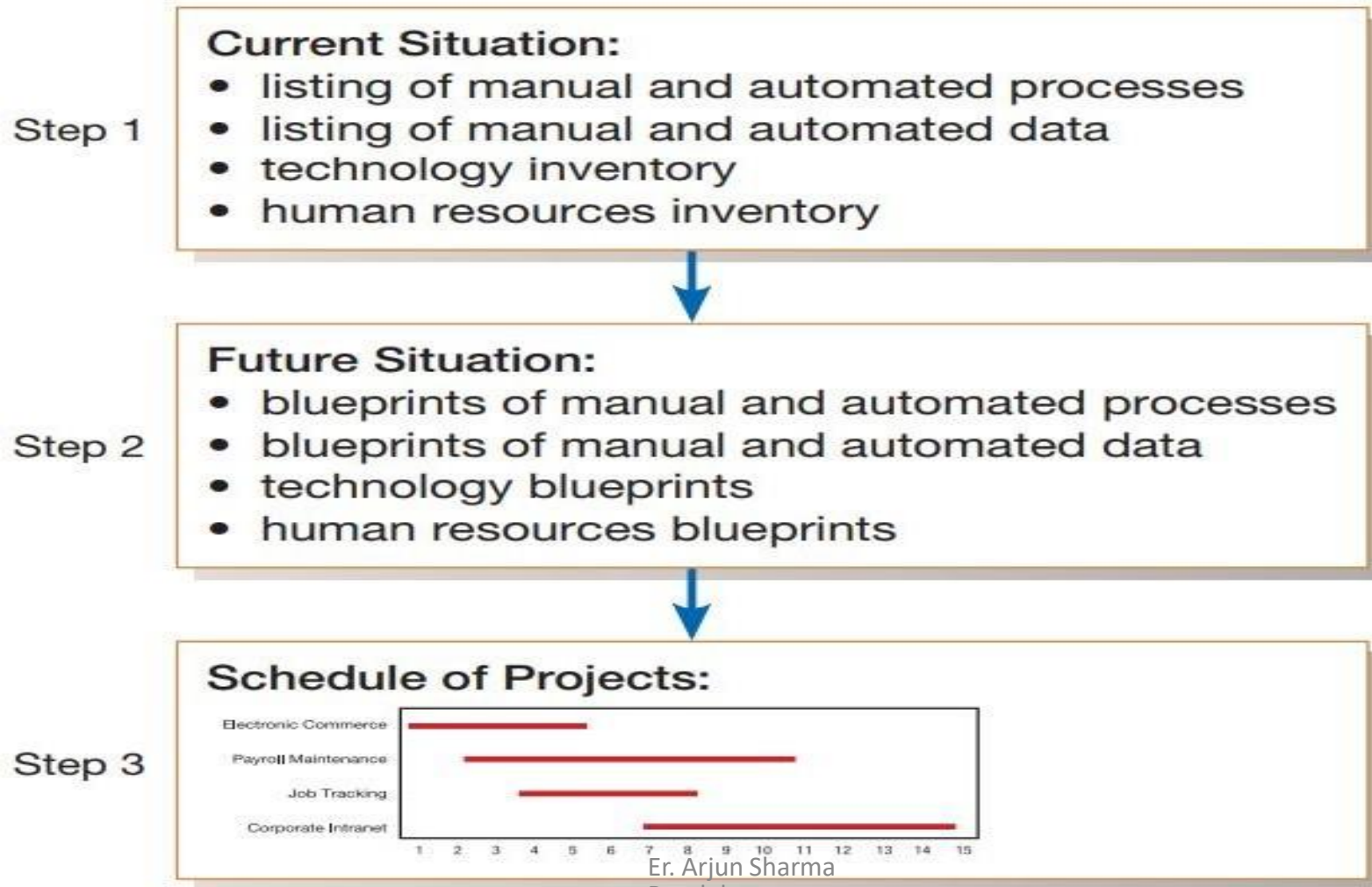
INFORMATION SYSTEMS PLANNING (ISP)

- 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.

The three key activities of this modeling process are represented in Figure 4-9.

Step 1

Current Situation:
- listing of manual and automated processes
- listing of manual and automated data
- technology inventory
- human resources inventory

Step 2

Future Situation:
- blueprints of manual and automated processes
- blueprints of manual and automated data
- technology blueprints
- human resources blueprints

Step 3

Schedule of Projects:

Electronic Commerce
Payroll Maintenance
Job Tracking
Corporate Intranet

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

- 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 4-10.

Corporate Strategic Planning

Information Systems Planning

Current Enterprise

Current Situation:
- listing of manual and automated processes
- listing of manual and automated data
- technology inventory
- human resources inventory

Future Enterprise

Future Situation:
- blueprints of manual and automated processes
- blueprints of manual and automated data
- technology blueprints
- human resources blueprints

Strategic Plan

Schedule of Projects:

	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Electronic Commerce	
Payroll Maintenance	
Job Tracking	
Corporate Intranet	

Approaches to IS Planning

- Top-down planning
  - Attempts to gain a broad understanding of information system needs of the entire organization

- Bottom-up planning
  - Identifies IS development projects based on solving specific operational business problems or taking advantage of specific opportunities

Benefits of Top-Down Planning

- Broader perspective

- Improved integration

- Improved management support

- Better understanding

But, bottom-up planning can be faster and less costly, so may be beneficial in certain circumstances

Identifying Functions, Processes, and Data Entities

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

FUNCTIONS:
- business planning
- product development
- marketing and sales
- production operations
- finance and accounting
- human resources

...

DATA ENTITIES:
- customer
- product
- vendor
- raw material
- order
- invoice
- equipment

...

INFORMATION SYSTEMS:
- payroll processing
- accounts payable
- accounts receivable
- time card processing
- inventory management

...

Functional Decomposition

Figure 4-12 Functional decomposition of information systems planning information (Pine Valley Furniture)
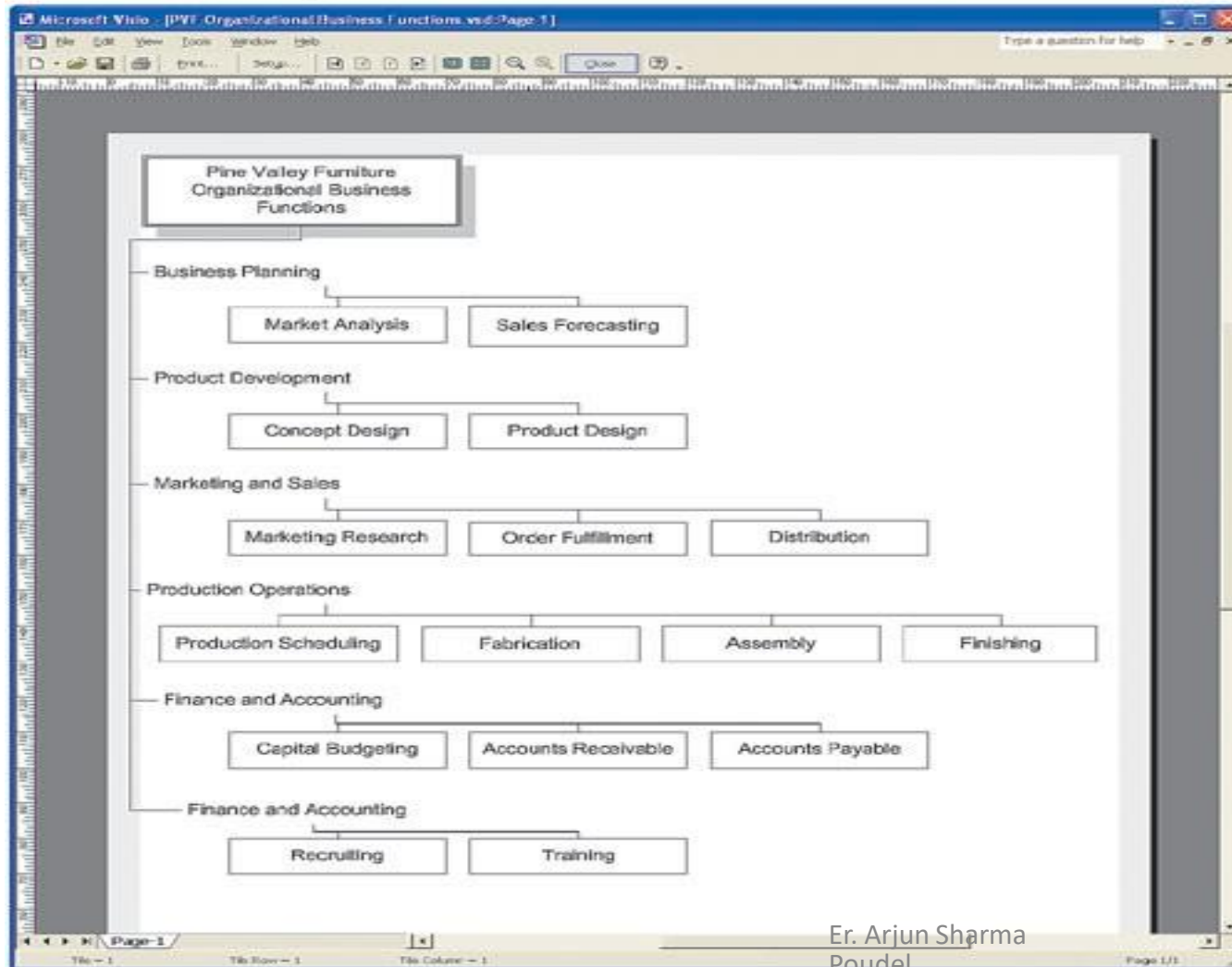
Decomposition: breaking high-level abstract information into smaller units for more detailed planning

IS Planning Matrix

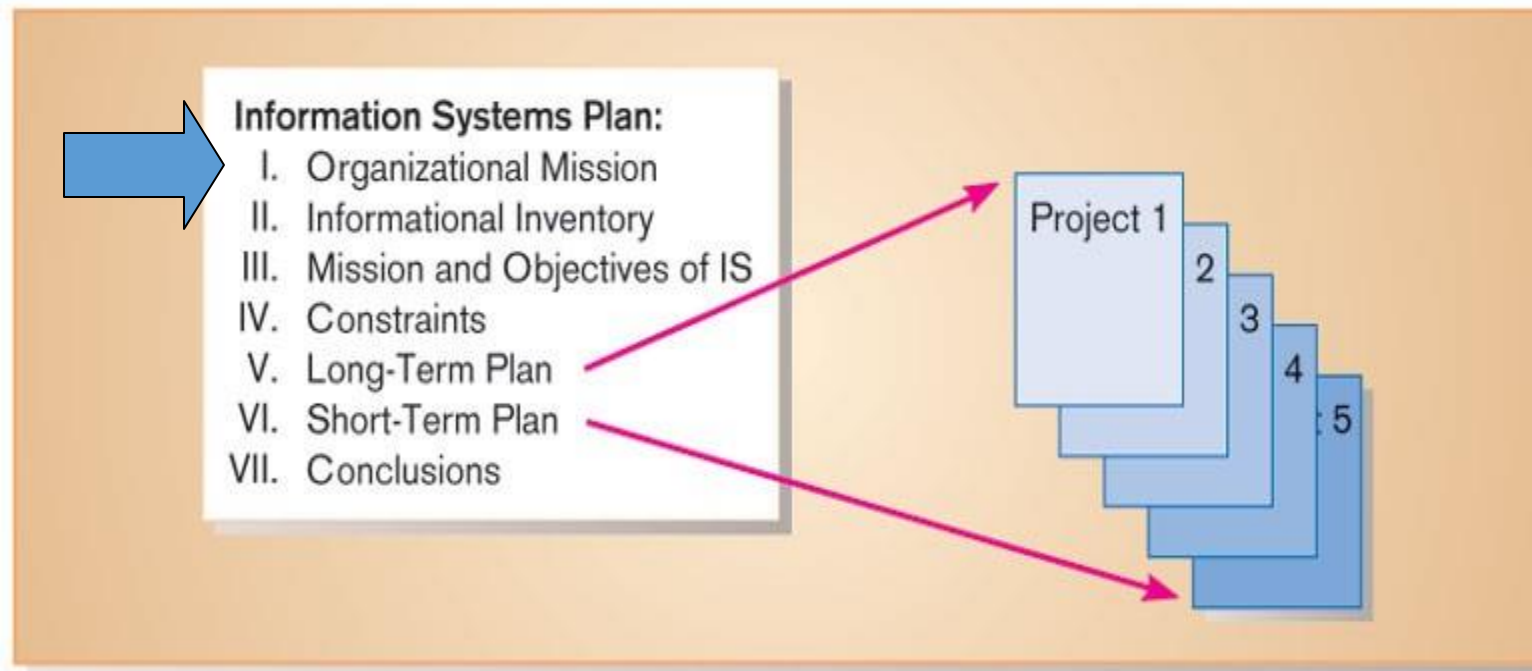**Figure 4-13** Data Entity-to-Function matrix (Pine Valley Furniture)

	Customer	Product	Vendor	Raw Material	Order	Work Center	Equipment	Employees	Invoice	Work Order	...
Marketing and Sales											
Marketing Research	X	X									
Order Fulfillment	X	X			X				X		
Distribution	X	X									
Production Operation											
Production Scheduling						X	X	X		X	
Fabrication						X	X	X		X	
Assembly						X	X	X		X	
Finishing						X	X	X		X	
Finance and Accounting											
Capital Budgeting					X	X	X				
Accounts Receivable	X	X	X	X	X				X		
Accounts Payable											
...											

Matrices describe relationships between pairs of organizational elements (location, function, business unit, objective, process, data, information system). The "X" in various cells of the matrix represents which business functions utilize which data entities.

Er. Arjun Sharma Poudel

50

IS Plan Components

Figure 4-16 Systems development projects flow from the information systems plan.

Information Systems Plan:
- I. Organizational Mission
- II. Informational Inventory
- III. Mission and Objectives of IS
- IV. Constraints
- V. Long-Term Plan
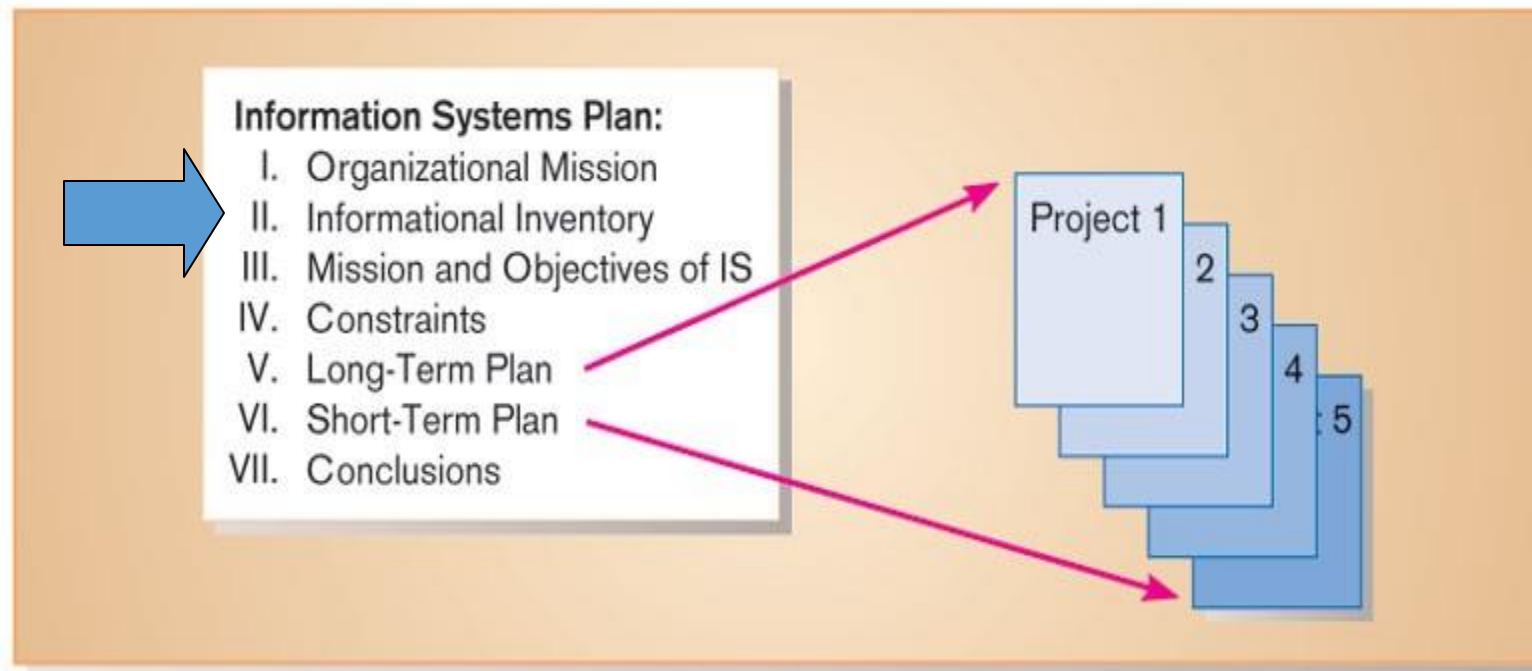- VI. Short-Term Plan
- VII. Conclusions

Project 1
2
3
4
5

Briefly describe mission, objectives, and strategy of the organization

IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

Information Systems Plan:
I. Organizational Mission
II. Informational Inventory
III. Mission and Objectives of IS
IV. Constraints
V. Long-Term Plan
VI. Short-Term Plan
VII. Conclusions

Project 1
2
3
4
5

Provide summary of current and future processes, functions, data entities, and information needs of the enterprise

IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

Information Systems Plan:
- I. Organizational Mission
- II. Informational Inventory
- III. Mission and Objectives of IS
- IV. Constraints
- V. Long-Term Plan
- VI. Short-Term Plan
- VII. Conclusions
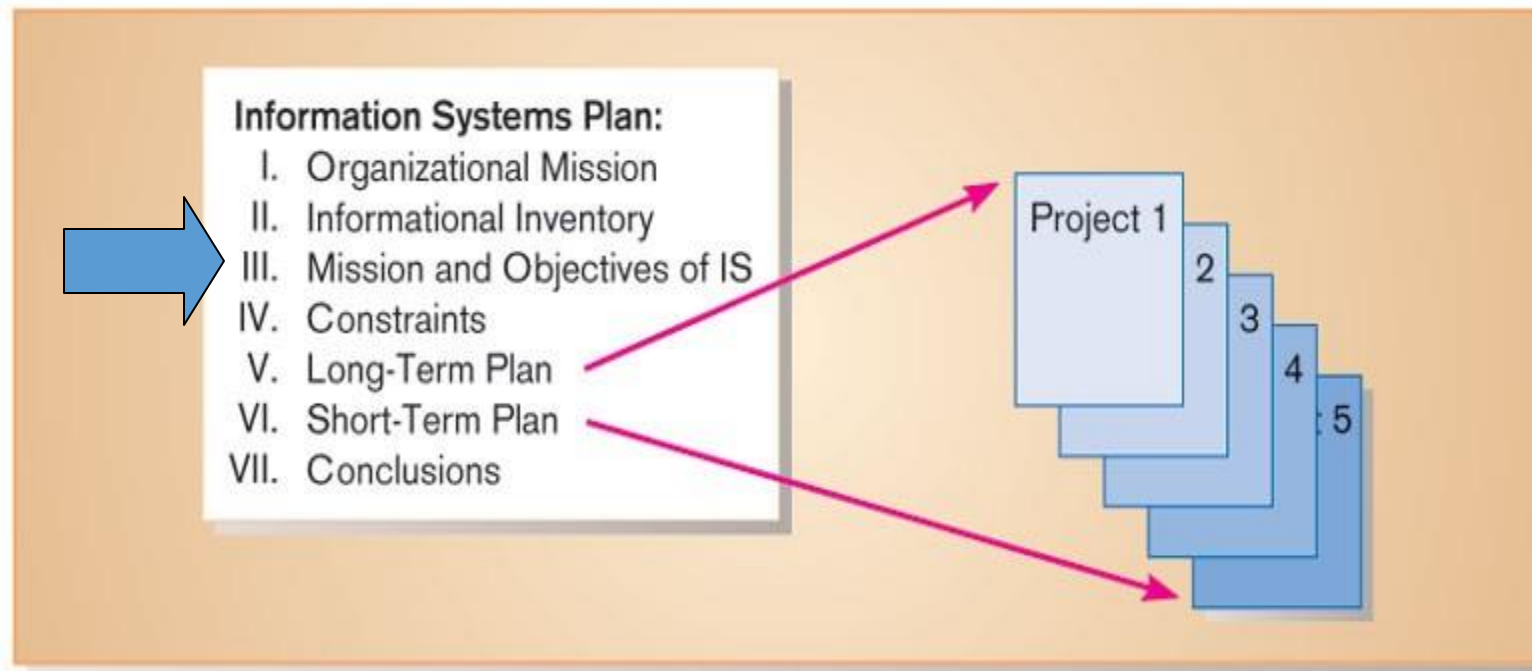
Project 1
2
3
4
5

Describe primary role IS will play in the organization to transform enterprise from current to future state

IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

Information Systems Plan:
I. Organizational Mission
II. Informational Inventory
III. Mission and Objectives of IS
IV. Constraints
V. Long-Term Plan
VI. Short-Term Plan
VII. Conclusions
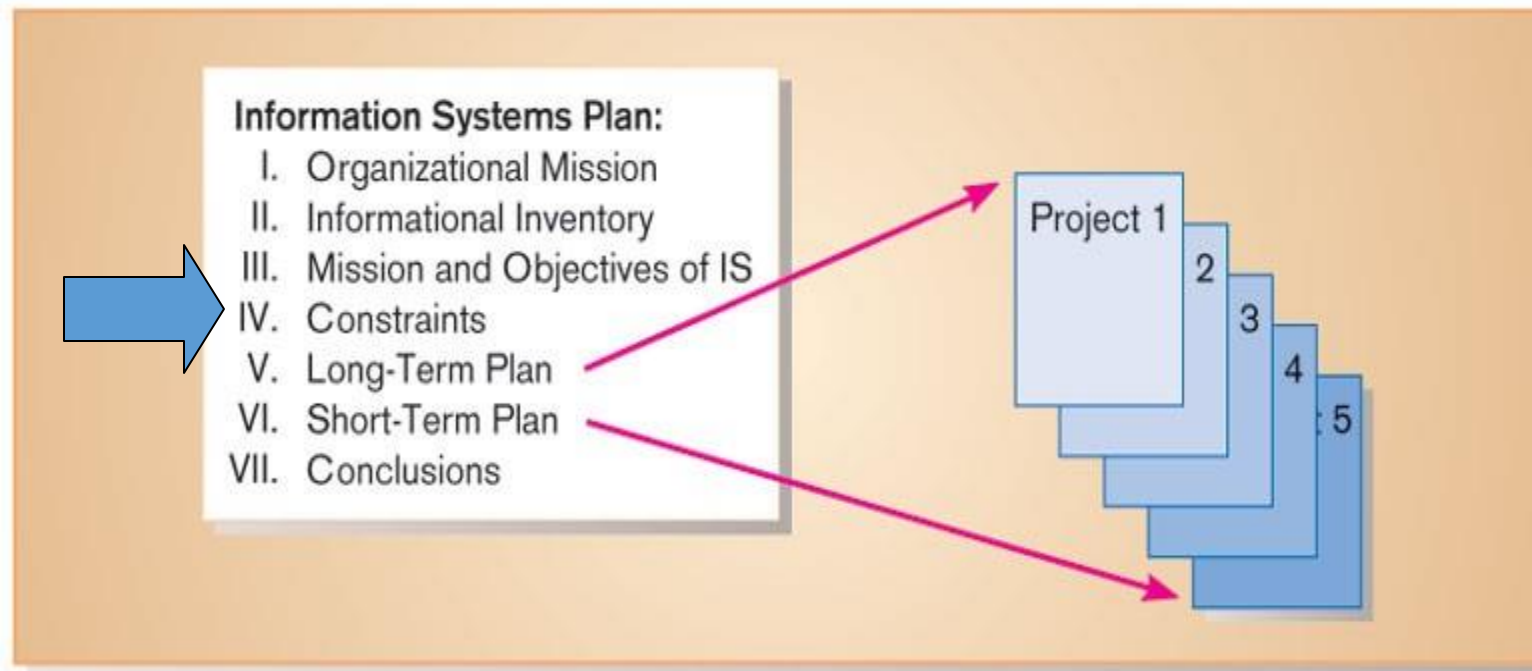
Project 1
2
3
4
5

Describe limitations imposed by technology and current levels of financial, technical, and personnel resources

IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

Information Systems Plan:
I. Organizational Mission
II. Informational Inventory
III. Mission and Objectives of IS
IV. Constraints
V. Long-Term Plan
VI. Short-Term Plan
VII. Conclusions
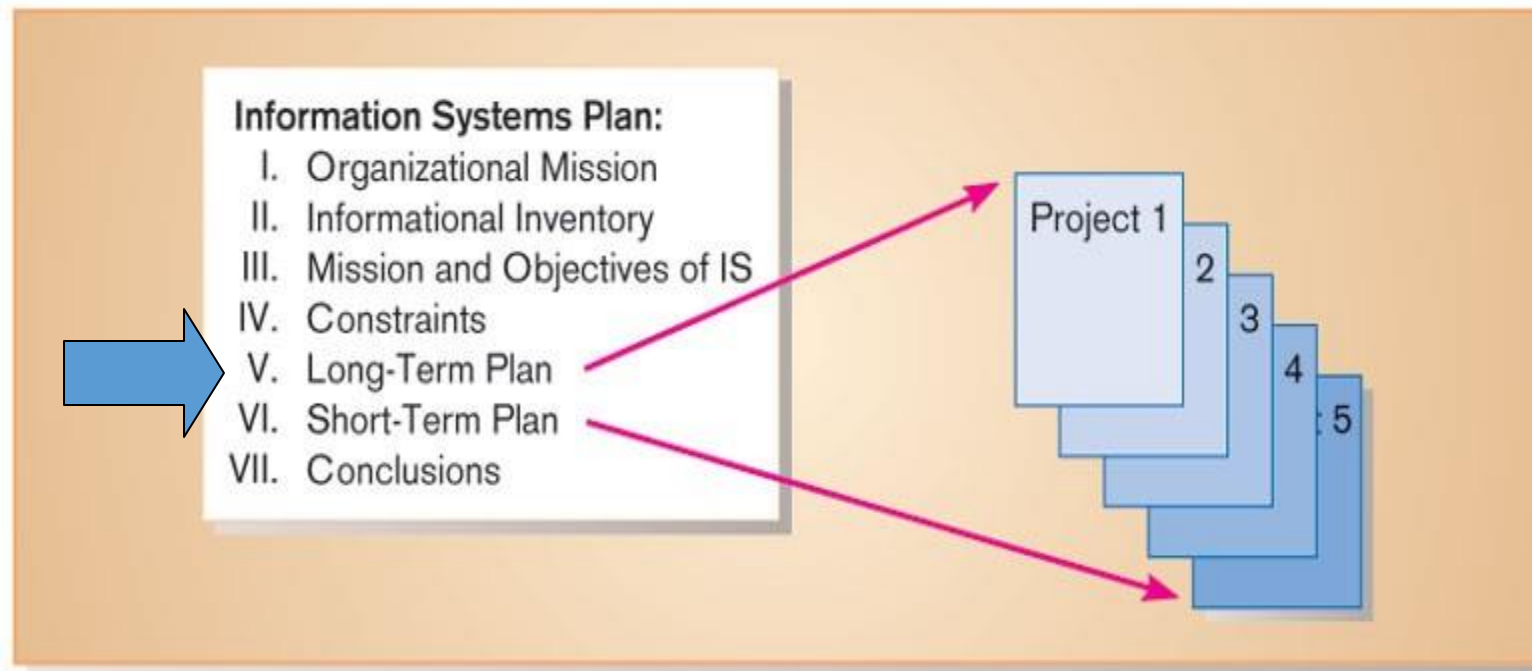
Project 1
2
3
4
5

Summarize overall information systems needs in the company and set long-term strategies for filling the needs

IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

Information Systems Plan:
I. Organizational Mission
II. Informational Inventory
III. Mission and Objectives of IS
IV. Constraints
V. Long-Term Plan
VI. Short-Term Plan
VII. Conclusions
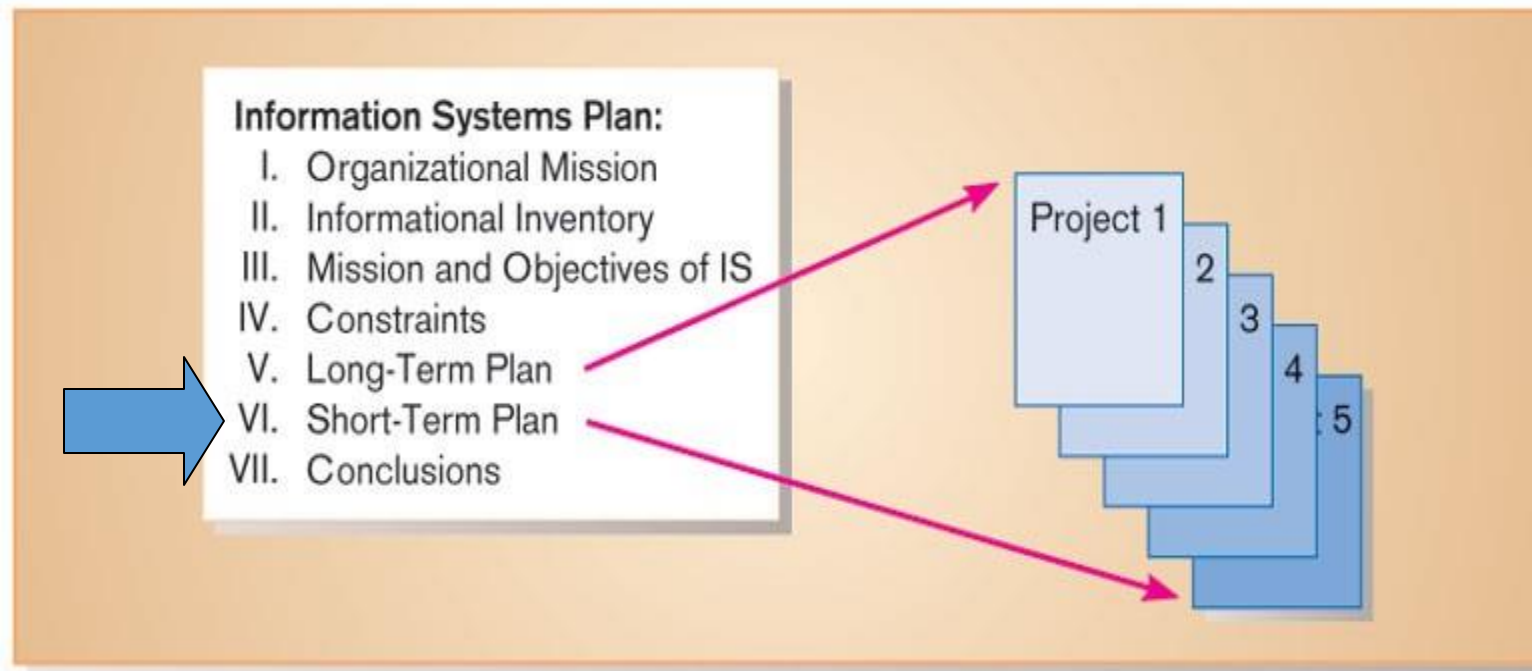
Project 1
2
3
4
5

Show detailed inventory of present projects and systems and detailed plan for the current year

IS Plan Components (cont.)

Figure 4-16 Systems development projects flow from the information systems plan.

Information Systems Plan:
I. Organizational Mission
II. Informational Inventory
III. Mission and Objectives of IS
IV. Constraints
V. Long-Term Plan
VI. Short-Term Plan
VII. Conclusions

Project 1
2
3
4
5
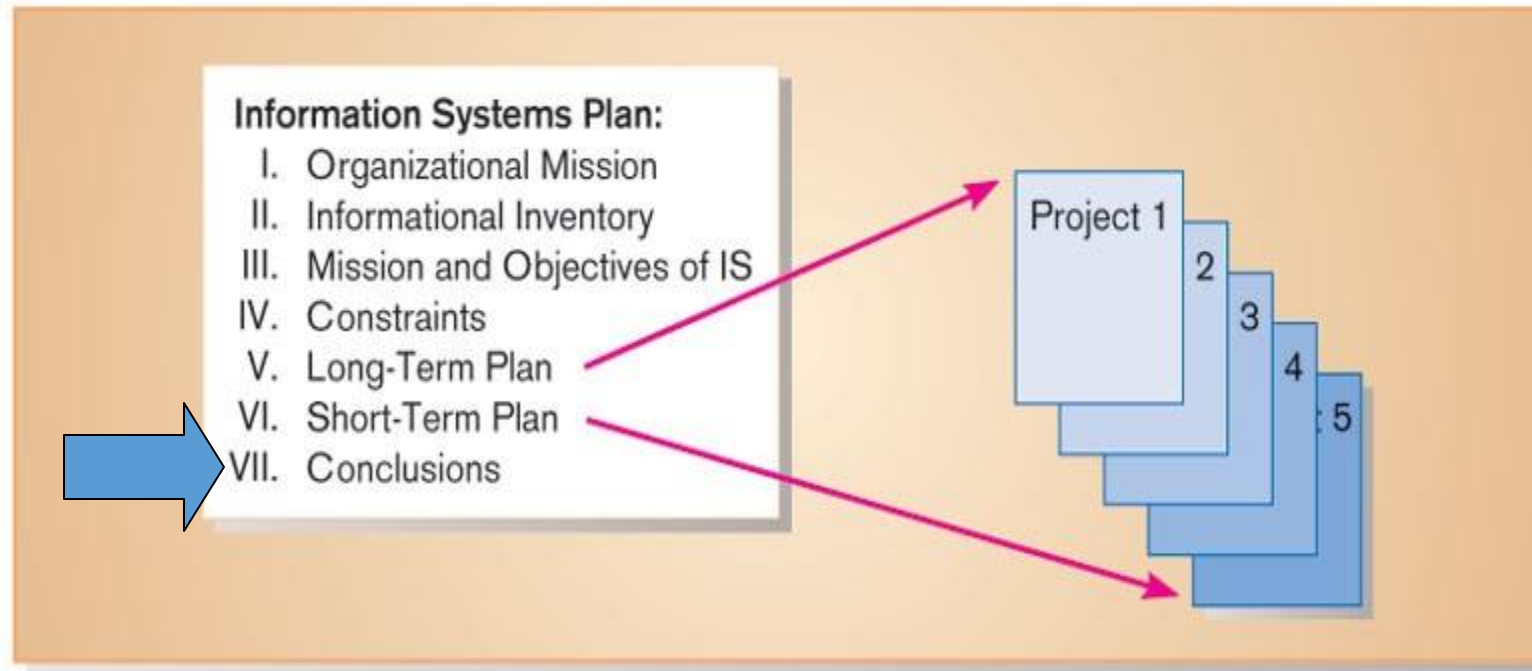
Describe unknown but likely events that can affect the plan, presently known business change elements, and description of their impact on the plan

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

Business-to-Business (B2B)

Individual	Business	Business

Business-to-Consumer (B2C)

Business-to-Employee (B2E)
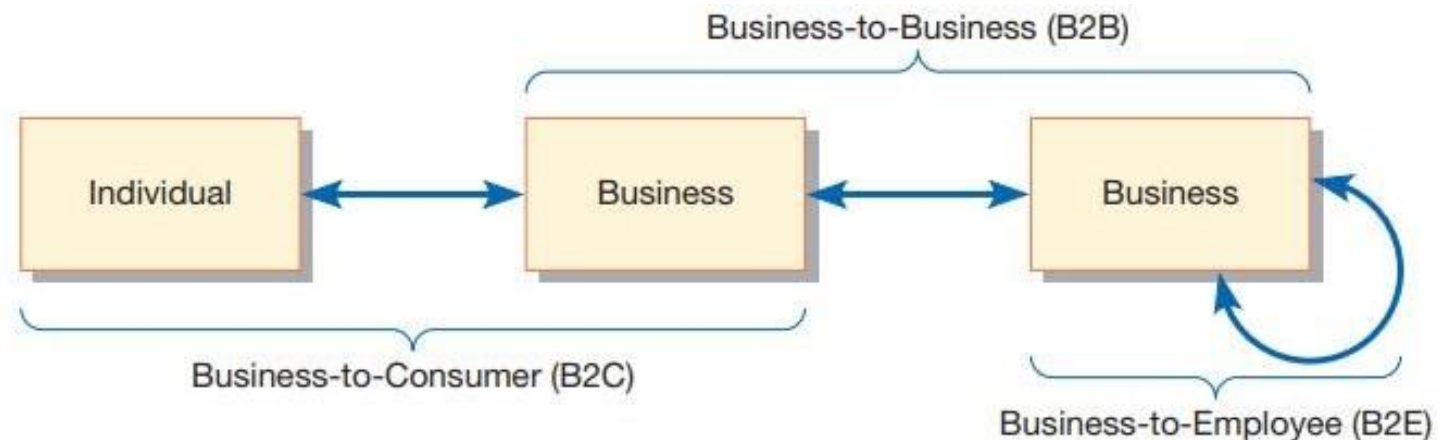
FIGURE 4-17
Three possible modes of electronic commerce

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

INITIATING AND PLANNING SYSTEM DEVELOPMENT PROJECTS

la सुरु garum

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 "preproject" step in the life cycle.

Introduction Contd...

- 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.

- Thus, the focus of this chapter is on this process. Project initiation and planning is where projects are accepted for development, rejected, or redirected.

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.

- for cross-department projectsGetting all parties to agree on the direction of a project may be difficult 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.

my lord dar lagyo
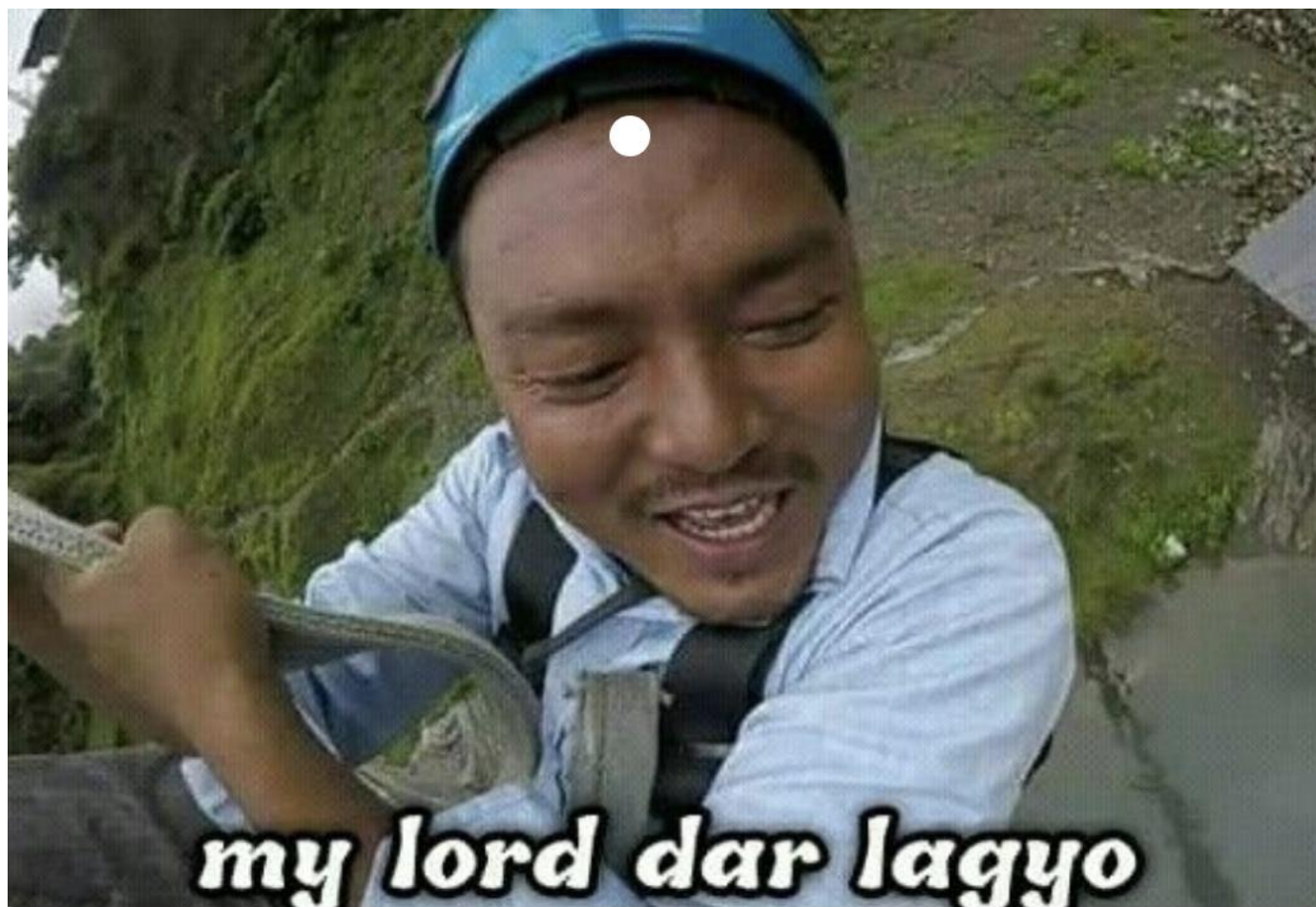
THE PROCESS OF INITIATING AND PLANNING IS DEVELOPMENT PROJECTS

- 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.

- 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

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

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.*

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

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.

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.

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.)

Tangible cost

A cost associated with an information system that can be measured in dollars and with certainty.

Intangible cost

A cost associated with an information system that cannot be easily measured in terms of dollars or with certainty.

- Actual benefits will vary from system to system.

- After determining project benefits, project costs must be identified.

- *Intangible benefit: A benefit derived from the creation of an information system that cannot be easily measured in dollars or with certainty*

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.

TABLE 5-4 Possible Information Systems Costs

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

- 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.*

- Consequently, besides tangible and intangible costs, you can distinguish IS-related development costs as either **one-time** or **recurring**.
- 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.

- 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 cost

A cost associated with project start-up and development or system start-up.

Recurring cost

A cost resulting from the ongoing evolution and use of a system.

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 5-4
One-time costs for Customer Tracking System (Pine Valley Furniture)

FIGURE 5-5
Recurring 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/GB = $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**

paisa hi paisa hoga

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

- Present value: current value of a future cash flow

- Discount rate: rate of return used to calculate the present value of future cash flows

- Time value of money (TVM): comparing present cash outlays to future expected returns

Net Present Value

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

PV_n = *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*.

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.

Break-Even Analysis

Figure 5-8 Break-even analysis for Customer Tracking System (Pine Valley Furniture)
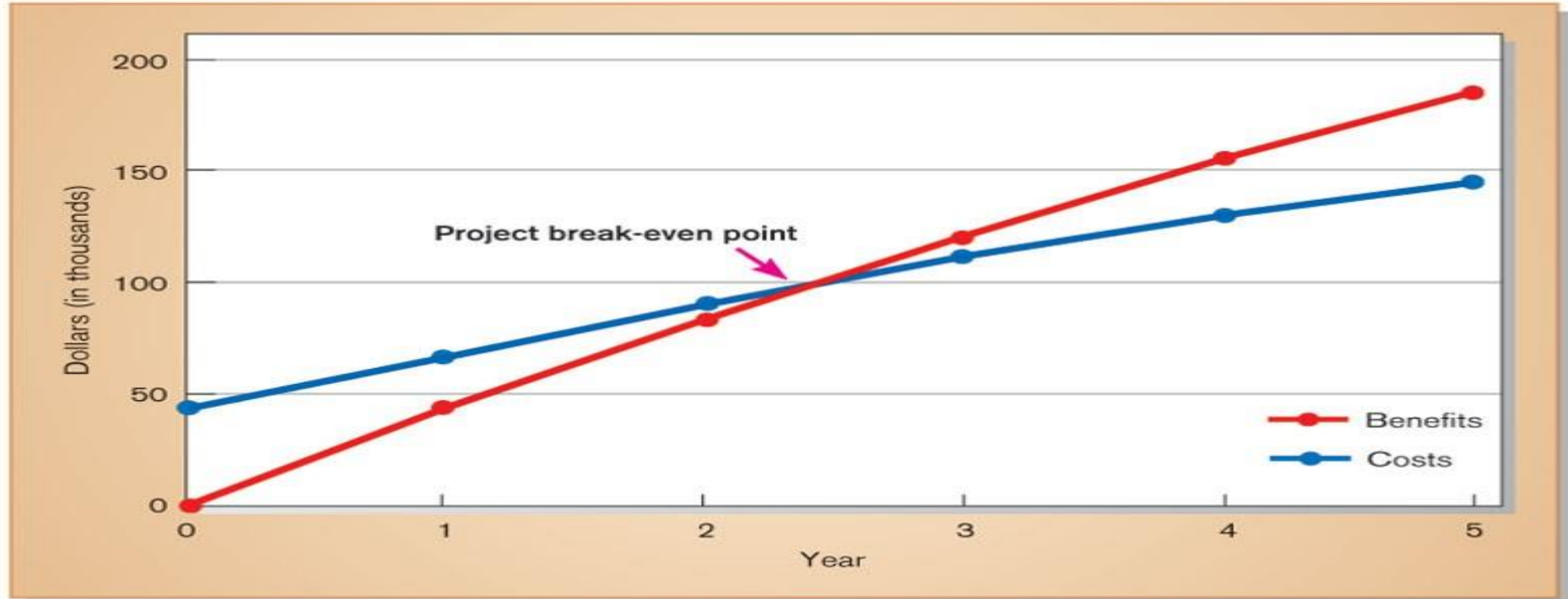
$$\text{Break-Even Ratio} = \frac{\text{Yearly NPV Cash Flow} - \text{Overall NPV Cash Flow}}{\text{Yearly NPV Cash Flow}}$$

Er. Arjun Sharma Poudel

107

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.

- 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

- When using these factors for conducting a technical risk assessment, four general rules emerge:

- 1. Large projects are riskier than small projects

- 2. 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.

- 3. The development of a system employing commonly used or standard technology will be less risky than one employing novel or nonstandard technology.

- 4. 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.

Other Feasibility Concerns

- **Operational**
  - Does the proposed system solve problems or take advantage of opportunities?
- **Schedule**
  - Can the project time frame and completion dates meet organizational deadlines?
- **Legal and Contractual**
  - What are legal and contractual ramifications of the proposed system development project?
- **Political**
  - How do key stakeholders view the proposed system?

- ***<u>Elaborate this slide in your note copy</u>***

Building And Reviewing 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

Er. Arjun Sharma Poudel

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**

Er. Arjun Sharma Poudel

116

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)
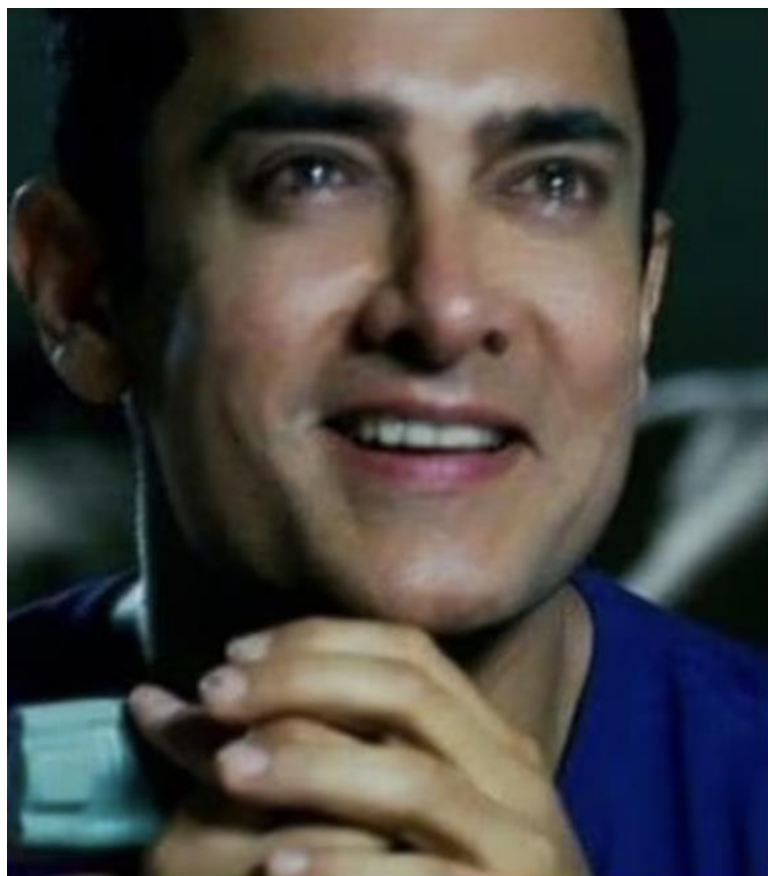
Context level is a top level data flow diagrams are covered in Chapter 7.112
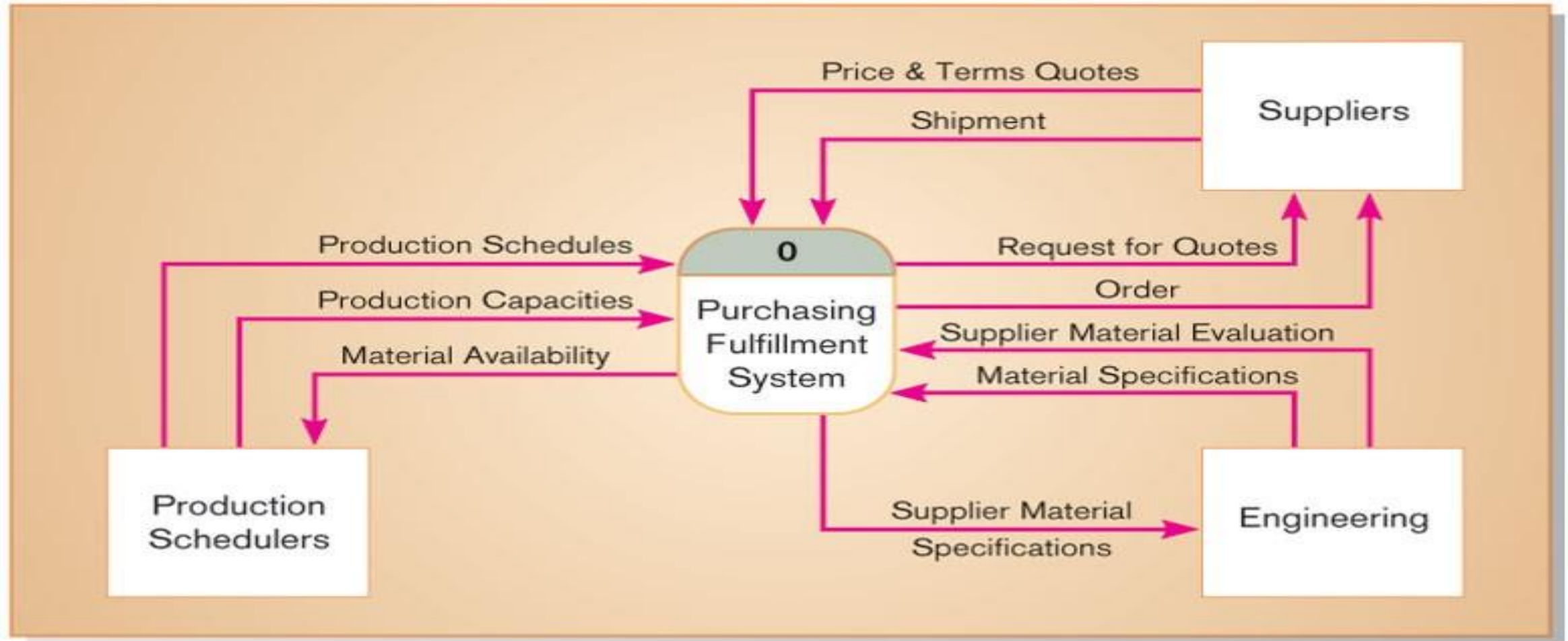
Structured Walkthroughs

- A peer-group review of any product created during the system development process

- 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

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		

Structured walkthrough form

MULTIPLE CHOICE QUESTIONS CHAPTER TWO

1. The first phase of the SDLC is:

a. Analysis   b. Design   c. Project initiation and planning

  d. Project identification and selection

2. Which of the following is characteristic of information systems identification and selection decisions made by top management?

a. Greater strategic focus   b. Greater organizational change   c. Less concern on cost-benefit analysis   d. Faster development

3. Which of the following is viewed as a top-down source?

a. Business unit   b. Steering committee   c. Managers   d. Development groups

4. The primary deliverable from the project identification and selection phase is a:

a. Schedule of specific IS development projects   b. Statement of Work

c. Mission statement   d. Design strategy

MULTIPLE CHOICE QUESTIONS CHAPTER TWO

5. Which of the following is an activity that occur during project initiation and planning?

a. Project structuring   b. Logical design   c. Project Planning   d. Requirement
   determination

6. Feasibility factors include:

a.   Political   b. Legal and contractual   c. Technical   d. All of the above

7. Cost reduction and avoidance, error reduction, and increased speed of activity are
   examples of:

a. Intangible cost b. Tangible cost   c. Tangible benefits   d. Intangible benefits

8. Which of the following Baseline Project Plan sections provides a brief description of
   alternative system configurations?

a. Management Issues   b. Feasibility Assessment   c. Introduction   d. System
   Description

9. Referencing walkthrough roles, this person describes the work product to the group:

a. Coordinator   b. User   c. Maintenance oracle   d. Presenter

QUESTIONS CHAPTER TWO

1. Describe the project identification and selection process.

2. Describe several project evaluation criteria.

3. Describe value chain analysis and how organizations use this technique to evaluate and compare projects.

4. Discuss several factors that provide evidence for the need for improved ISP today.

5. Describe the steps involved in corporate strategic planning.

6. What are the three generic competitive strategies?

7. List and describe the advantages of top-down planning over other planning approaches.

8. Write a mission statement for a business that you would like to start. The mission statement should state the area of business you will be in and what aspect of the business you value highly.

9. List and describe the steps in the project initiation and planning process.

0. What is contained in a BPP? Are the content and format of all baseline plan the same?

QUESTIONS CHAPTER TWO

11. Write and discuss the different types of project feasibility factors.

12. Is any feasibility factor most important? Why or why not?

13. Describe three commonly used methods for performing economic cost-benefit analysis.

14. What intangible benefits might an organization obtain from the development of an information system?

15. What are the types or categories of benefits of an IS project?

16. Describe the concept of the time value of money. How does the discount rate affect the value of $1 today versus one year from today?

17. Describe the structured walk-through process.

18. What roles need to be performed during a walk-through?

19. Assuming monetary benefits of an information system at $ 85,000 per year, one-time costs of $ 75,000, recurring costs of $ 35, 000 per year, a discount rate of 12 percent, and a five year horizon, calculate the net present value of these costs and benefits of an information system. Also calculate the overall return on investment of the project and then present a break-even analysis. At what point does breakeven occur?

QUESTIONS CHAPTER TWO

20. Write short notes on:

a. Mission

b. Objective statements

c. Competitive strategy

d. Corporate strategic planning

e. Top-down planning

f. Bottom-up planning

g. Low-cost producer

h. Information System Planning

i. Value Chain Analysis

j. Break-even Analysis

k. Baseline Project Plan (BPP)

l. Discount rate

m. Economic Feasibility

n. Business case

o. One-time cost

p. Project Scope Statement (PSS)

q. Total Cost of Ownership (TCO)

END OF CHAPTER TWO