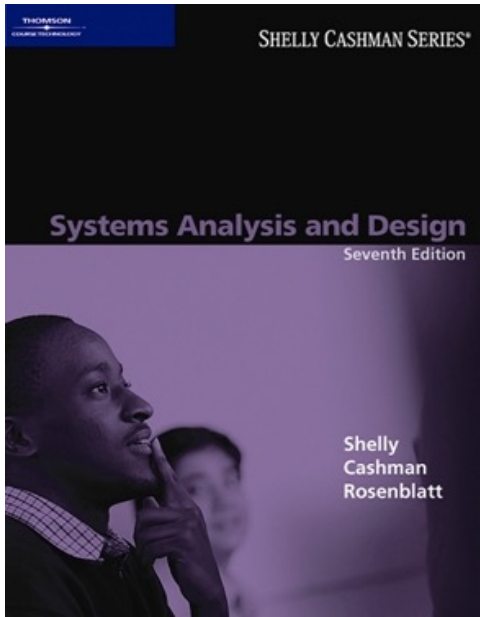
THOMSON
COURSE TECHNOLOGY

Systems Analysis & Design
7th Edition

Chapter 2



Phase Description

- Systems planning is the first of five phases in the systems development life cycle (SDLC)
- In this phase, you will learn how IT projects get started and how a systems analyst evaluates a proposed project and determines its feasibility

Chapter Objectives

- Explain the concept of a business case and how a business case affects an IT project
- Describe the strategic planning process and why it is important to the IT team
- Explain the purpose of a mission statement

Chapter Objectives

- Describe the SDLC, and explain how it serves as a framework for systems development and business modeling
- Describe risks and risk management features
- List the reasons for information systems projects and the factors that affect such projects

Chapter Objectives

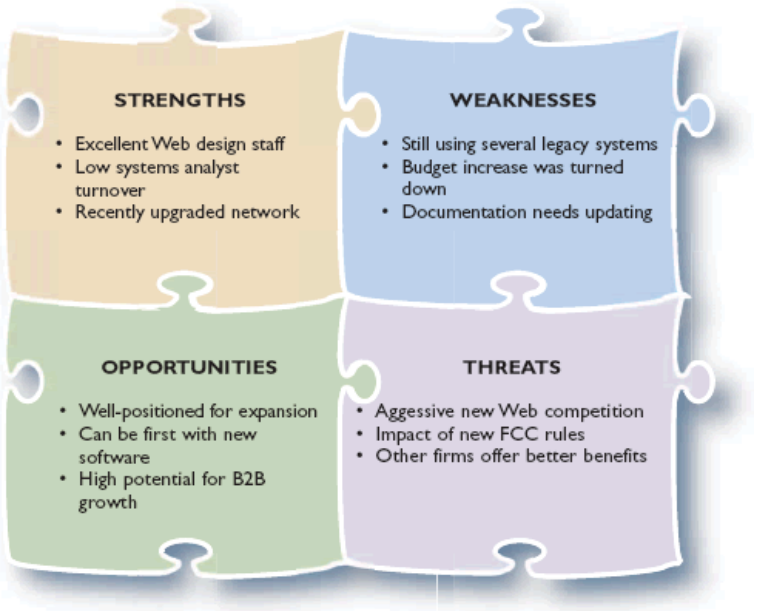
- Explain the initial review of systems requests and the role of the systems review committee
- Define operational feasibility, technical feasibility, economic feasibility, and schedule feasibility
- Describe the steps in a preliminary investigation and the end product of an investigation

Introduction

- The term business case refers to the reasons, or justification, for a proposal
- Systems development typically starts with a systems request, followed by a preliminary investigation, which includes a feasibility study

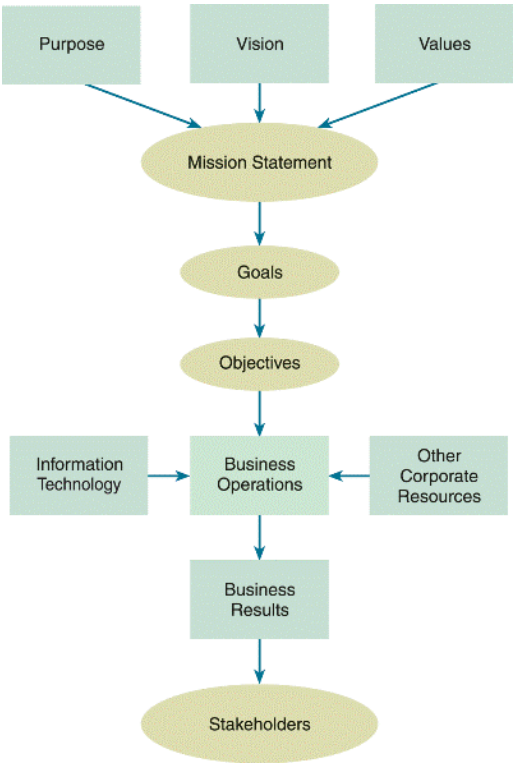
Strategic Planning – A Framework for IT Systems Development

- **Strategic planning is the process of identifying long-term organizational goals, strategies, and resources**
- **Strategic Planning Overview**
  - SWOT analysis



Strategic Planning – A Framework for IT Systems Development

- **From Strategic Plans to Business Results**
  - Mission statement
  - Stakeholders
  - Goals
  - Objectives



Strategic Planning – A Framework for IT Systems Development

- **A Business Example**
  - Critical success factors
  - Critical business issues
  - Case for action

Strategic Planning – A Framework for IT Systems Development

- **The Role of the IT Department in Project Evaluation**
  - Management leadership and information technology are linked closely, and remarkable changes have occurred in both areas
  - Today, systems development is much more team oriented
  - Although team-oriented development is the norm, some companies see the role of the IT department as a gatekeeper

Strategic Planning – A Framework for IT Systems Development

- **The Future**
  - If you could look into the future, here is what you might see: New industries, products, and services emerging from amazing advances in information technology, customers who expect world-class IT support, a surge in Internet-based commerce, and a global business environment that is dynamic and incredibly challenging

What Is a Business Case?

- Should be comprehensive, yet easy to understand
- Should describe the project clearly, provide the justification to proceed, and estimate the project's financial impact

Information Systems Projects

- **Main Reasons for Systems Projects**
  - Systems request
  - Improved service
  - Support for new products and services
  - Better performance
  - More information

Information Systems Projects

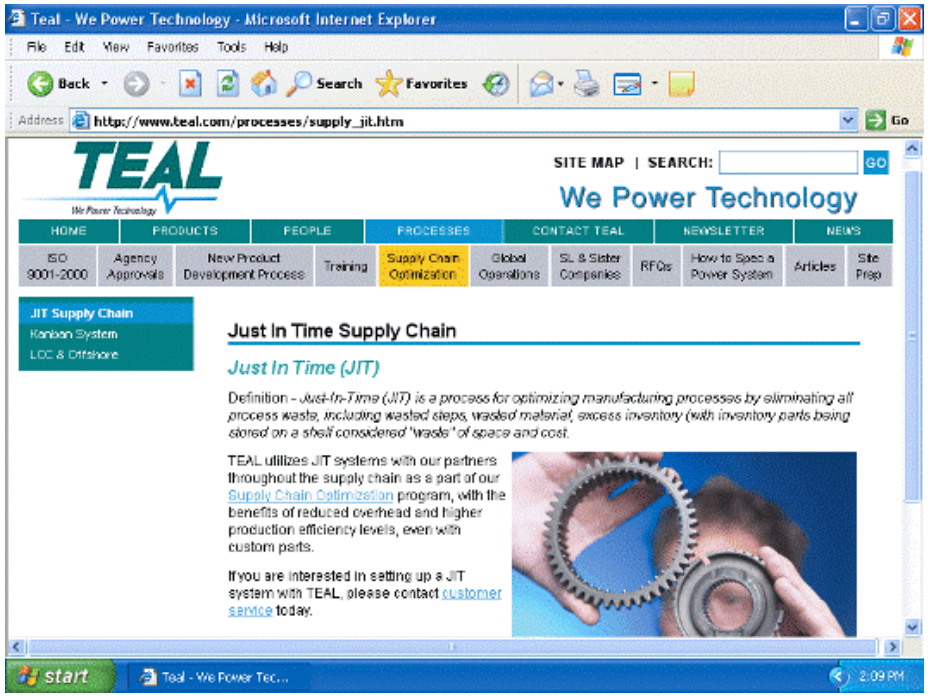
- **Main Reasons for Systems Projects**
  - Stronger controls
    - Encryption and biometric devices
  - Reduced cost
- **Factors that Affect Systems Projects**
  - Internal and external factors affect every business decision that a company makes, and IT systems projects are no exception

Information Systems Projects

- **Internal Factors**
  - Strategic plan
  - Top managers
  - User requests
  - Information technology department
  - Existing systems and data

Information Systems Projects

- **External Factors**
  - Technology
    - Electronic product code (EPC)
  - Suppliers
    - Just-in-time (JIT)



Information Systems Projects

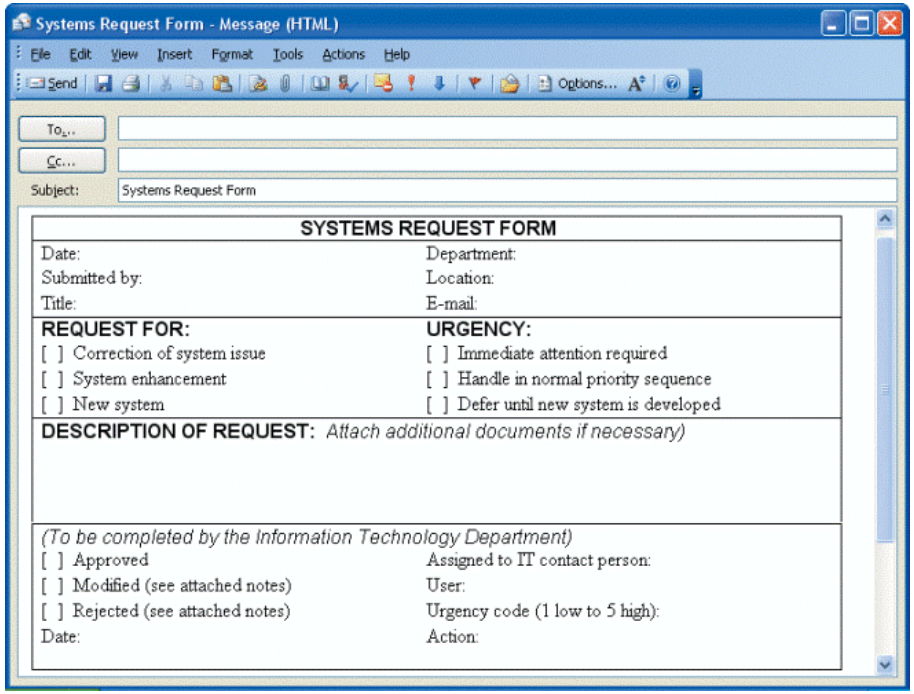
- **External Factors**
  - Customers
    - Customer Relationship Management (CRM)
    - Electronic proof of delivery (EPOD)
  - Competitors
  - The economy
  - Government

Information Systems Projects

- **Project Management Tools**
  - All IT projects, large and small, must be managed and controlled
  - Project management begins with a systems request, and continues until the project is completed or terminated
- **Risk Management**
  - Every IT project involves risks that system analysts and IT project managers must address
  - Risk management

Evaluation of Systems Requests

- Systems review committee
- Computer resources committee
- Systems Requests Forms



Evaluation of Systems Requests

- **Systems Review Committees**
  - Most large companies use a systems review committee to evaluate systems requests
  - Many smaller companies rely on one person to evaluate system requests instead of a committee
  - The goal is to evaluate the requests and set priorities

Overview of Feasibility

- **A systems request must pass several tests, called a feasibility study, to see whether it is worthwhile to proceed further**

Overview of Feasibility

- **Operational Feasibility**
  - A proposed system will be used effectively after it has been developed.

- **Technical Feasibility**
  - Technical feasibility refers to technical resources needed to develop, purchase, install, or operate the system

Overview of Feasibility

- **Economic Feasibility**
  - Total cost of ownership (TCO)
  - Tangible benefits
  - Intangible benefits
- **Schedule Feasibility**
  - A project can be implemented in an acceptable time frame.

Evaluating Feasibility

- The first step in evaluating feasibility is to identify and weed out systems requests that are not feasible
- Even if the request is feasible, it might not be necessary
- Feasibility analysis is an ongoing task that must be performed throughout the systems development process

Setting Priorities

- **Factors that Affect Priority**
  - Will the proposed system reduce costs? Where? When? How? How much?
  - Will the system increase revenue for the company? Where? When? How? How much?

Setting Priorities

- **Factors that Affect Priority**
  - Will the systems project result in more information or produce better results? How? Are the results measurable?
  - Will the system serve customers better?
  - Will the system serve the organization better?

Setting Priorities

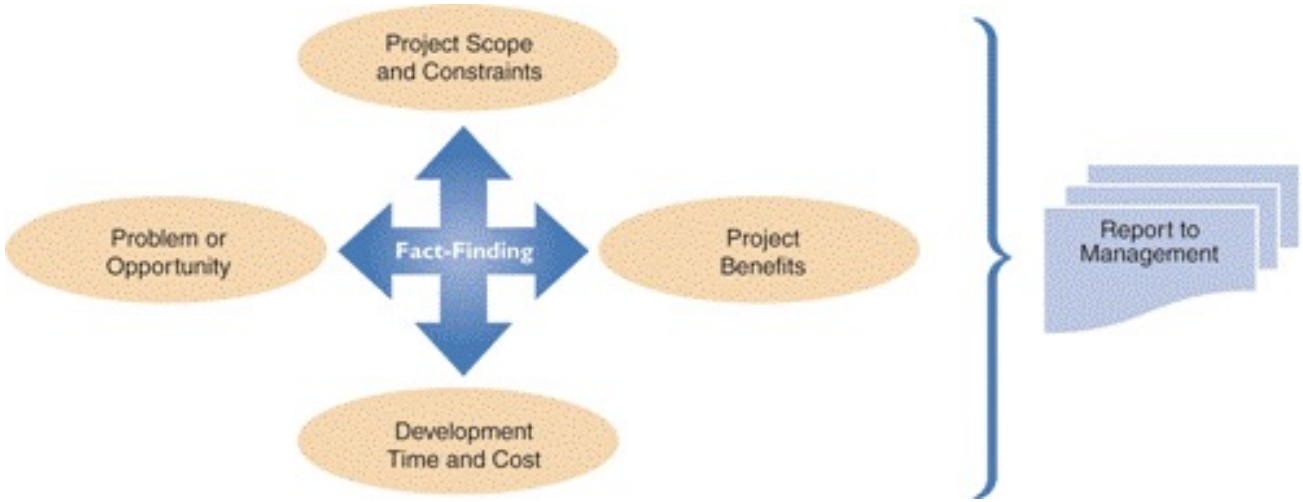
- **Factors that Affect Priority**
  - Can the project be implemented in a reasonable time period? How long will the results last?
  - Are the necessary financial, human, and technical resources available?
  - Whenever possible, the analyst should evaluate a proposed project based on tangible costs and benefits that represent actual (or approximate) dollar values

Setting Priorities

- **Discretionary and Nondiscretionary Projects**
  - Projects where management has a choice in implementing them are called discretionary projects
  - Projects where no choice exists are called nondiscretionary projects

Preliminary Investigation Overview

- Preliminary investigation
- Interaction with Managers and Users

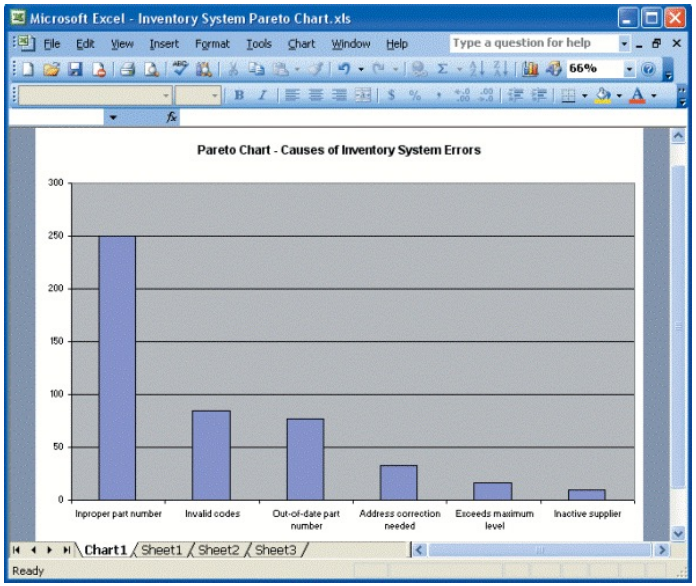


Preliminary Investigation Overview

- **Planning the Preliminary Investigation**
  - During a preliminary investigation, a systems analyst typically follows a series of steps
  - The exact procedure depends on the nature of the request, the size of the project, and the degree of urgency

Preliminary Investigation Overview

- **Step 1: Understand the Problem or Opportunity**
  - A popular technique for investigating causes and effects is called a fishbone diagram, or Ishikawa diagram
  - Pareto chart



Preliminary Investigation Overview

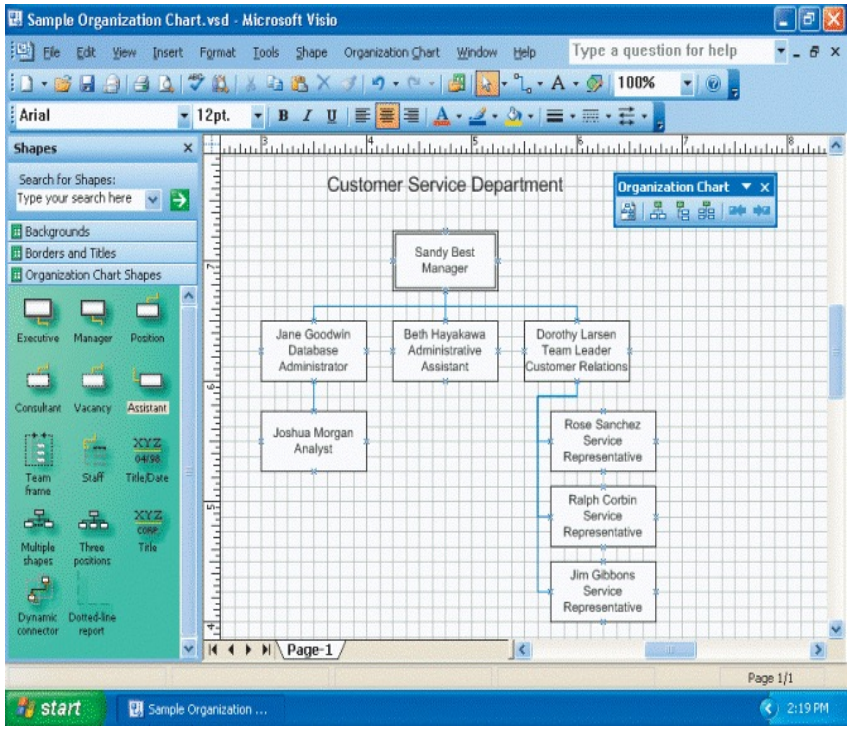
- **Step 2: Define the Project Scope and Constraints**
  - Project scope
  - Project creep
  - Constraint
  - Present versus future

Preliminary Investigation Overview

- **Step 2: Define the Project Scope and Constraints**
  - Present versus future
  - Internal versus external
  - Mandatory versus desirable
  - Regardless of the type, all constraints should be identified as early as possible to avoid future problems and surprises

Preliminary Investigation Overview

- **Step 3: Perform Fact-Finding**
  - Fact-finding involves various techniques
  - Fact-finding might consume several hours, days, or weeks
  - Analyze Organization Charts



Preliminary Investigation Overview

- **Step 3: Perform Fact-Finding**
  - Conduct interviews
    - Determine the people to interview
    - Establish objectives for the interview
    - Develop interview questions
    - Prepare for the interview
    - Conduct the interview
    - Document the interview
    - Evaluate the interview

Preliminary Investigation Overview

- **Step 3: Perform Fact-Finding**
  - Review documentation
  - Observe operations
  - Conduct a user survey
- **Step 4: Evaluate Feasibility**
  - Evaluate the project's operational, technical, economic, and schedule feasibility

Preliminary Investigation Overview

- **Step 5: Estimate Project Development Time and Cost**
  - What information must you obtain, and how will you gather and analyze the information?
  - What sources of information will you use, and what difficulties will you encounter in obtaining information?

Preliminary Investigation Overview

- **Step 5: Estimate Project Development Time and Cost**
  - Will you conduct interviews? How many people will you interview, and how much time will you need to meet with the people and summarize their responses?
  - Will you conduct a survey? Who will be involved? How much time will it take people to complete it? How much time will it take to prepare it and tabulate the results?

Preliminary Investigation Overview

- **Step 5: Estimate Project Development Time and Cost**
  - How much will it cost to analyze the information gathered and to prepare a report with findings and recommendations?
  - You should provide an estimate for the overall project, so managers can understand the full cost impact and timetable

Preliminary Investigation Overview

- **Step 6: Present Results and Recommendations to Management**
  - The final task in the preliminary investigation is to prepare a report to management
  - The format of the preliminary investigation report varies from one company to another

Preliminary Investigation Overview

- **Step 6: Present Results and Recommendations to Management**
  - Introduction
  - Systems request summary
  - Findings
  - Recommendations
  - Project Roles
  - Time & cost estimates
  - Expected benefits
  - Appendix

Chapter Summary

- Systems planning is the first phase of the systems development life cycle
- Effective information systems help an organization support its business process, carry out its mission, and serve its stakeholders

Chapter Summary

- Strategic planning allows a company to examine its purpose, vision, and values and develops a mission statement, which leads to goals, objectives, day-to-day operations, and business results that affect company stakeholders
- Systems projects are initiated to improve performance, provide more information, reduce costs, strengthen controls, or provide better service

Chapter Summary

- Various internal and external factors affect systems projects
- During the preliminary investigation, the analyst evaluates the systems request and determines whether the project is from an operation, technical, economic, and schedule standpoint

Chapter Summary

- Analysts evaluate systems requests on the basis of their expected costs and benefits, both tangible and intangible
- The steps in the preliminary investigation are to understand the problem or opportunity; define the project scope and constraints; perform fact-finding; estimate the project's benefits; estimate project development time and cost; and present results and recommendations to management

Chapter Summary

- The report must include an estimate of time, staffing requirements, costs, benefits, and expected results for the next phase of the SDLC

- Chapter 2 complete