Systems Analysis and Design- 1

Chapter 2
Analyzing the Business Case

Definition

- A business case is an argument, usually documented, that is intended to convince a decision maker to approve some kind of action. The document itself is sometimes referred to as a business case.
- http://whatis.techtarget.com/definition/business-case

Introduction

- Analysts must consider company's mission, objectives, and IT needs
- Process starts with a systems request
- Preliminary investigation follows to evaluate:
  - Feasibility study
  - Fact finding techniques
  - Reporting to management

What is a Business Case?

- A **business case** refers to the reasons, or justification, for a proposal
  - Should be comprehensive, yet easy to understand
  - Should describe the project clearly, provide the justification to proceed, and estimate the project's financial impact

What is a Business Case? (Cont.)

- A business case should answer the following questions:
  - Why are we doing this project?
  - What is the project about?
  - How does this solution address key business issues?
  - How much will it cost?
  - How long will it take?
  - Will we suffer a productivity loss during the transition?

What is a Business Case? (Cont.)

- A business case should answer the following questions (Cont.):
  - What is the return on investment and payback period?
  - What are the risks of doing the project?
  - What are the risks of *not* doing the project?
  - How will we measure success?
  - What alternatives exist?

Information Systems Projects

Main Reasons for Systems Requests:

- Improved Service
  - Improving service to customers or users within the company
- Support for New Products and Services
  - New products and services often require new types or levels of IT support
- Better Performance
  - Current system might not meet performance requirements

Information Systems Projects (Cont.)

- **Factors That Affect Systems Projects**
  - **Internal Factors**
    - Strategic Plan
    - Top Managers
    - User Requests
    - Information Technology Department
    - Existing Systems and Data
  - **External factors**
    - Technology
    - Suppliers
    - Customers
    - Competitors
    - The Economy
    - Government

Information Systems Projects (Cont.)

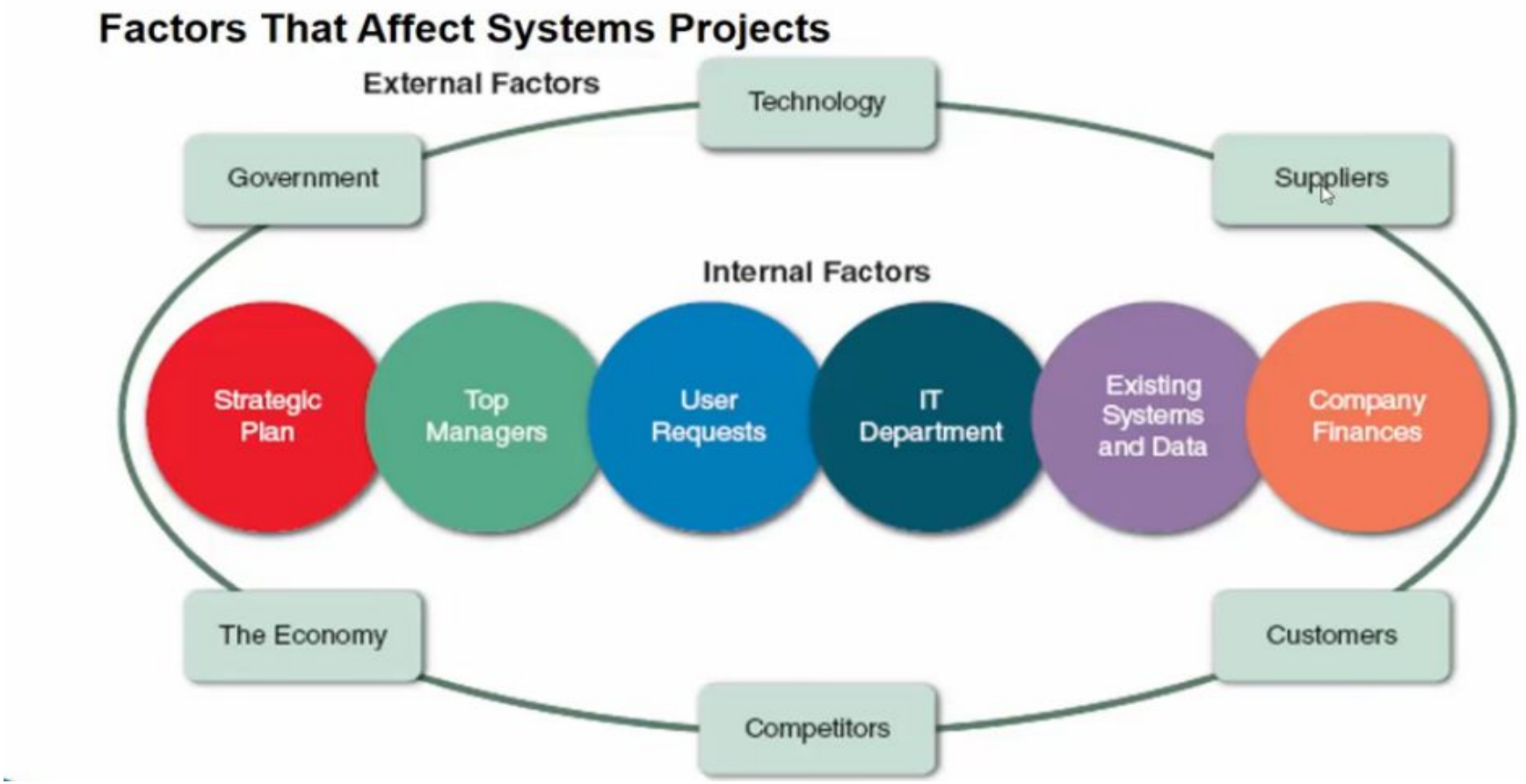

FIGURE 2-10 Internal and external factors that affect IT projects.

Evaluation of Systems Requests

- Systems Request Forms
  - Streamlines the request process
  - Ensures consistency
  - Easy to understand
  - Includes clear instructions
  - Indicates what supporting documents are needed
  - Submitted electronically

Evaluation of Systems Requests (Cont.)

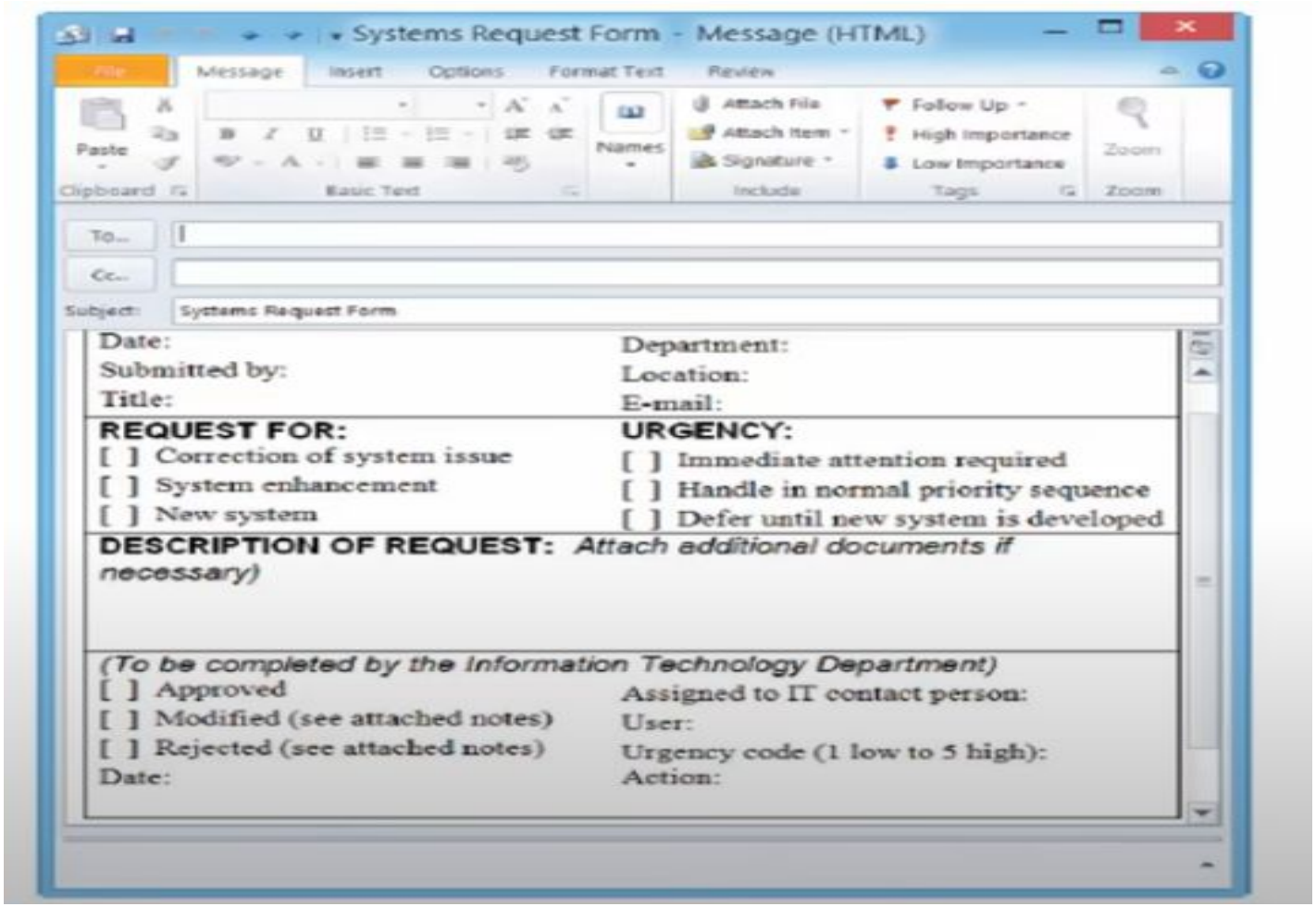

Figure 2-13 Example of an online systems request form

Evaluation of Systems Requests (Cont.)

- **Systems Review Committee**
  - With a broader viewpoint, a committee can establish priorities more effectively than an individual
  - One person's bias is less likely to affect the decisions
  - Disadvantages:
    - Action on requests must wait until the committee meets
    - Members might favor projects requested by their own departments
    - Internal political differences could delay important decisions

Overview of Feasibility

- Is the proposal desirable in an operational sense?
  - Is it a practical approach that will solve a problem or take advantage of an opportunity to achieve company goals?
- Is the proposal technically feasible?
  - Are the necessary technical resources and people available for the project?
- Is the proposal economically desirable?
  - What are the projected savings and costs?
- Are other intangible factors involved, such as customer satisfaction or company image?
  - Is the problem worth solving, and will the request result in a sound business investment?
- Can the proposal be accomplished within an acceptable time frame?

Overview of Feasibility (Cont.)

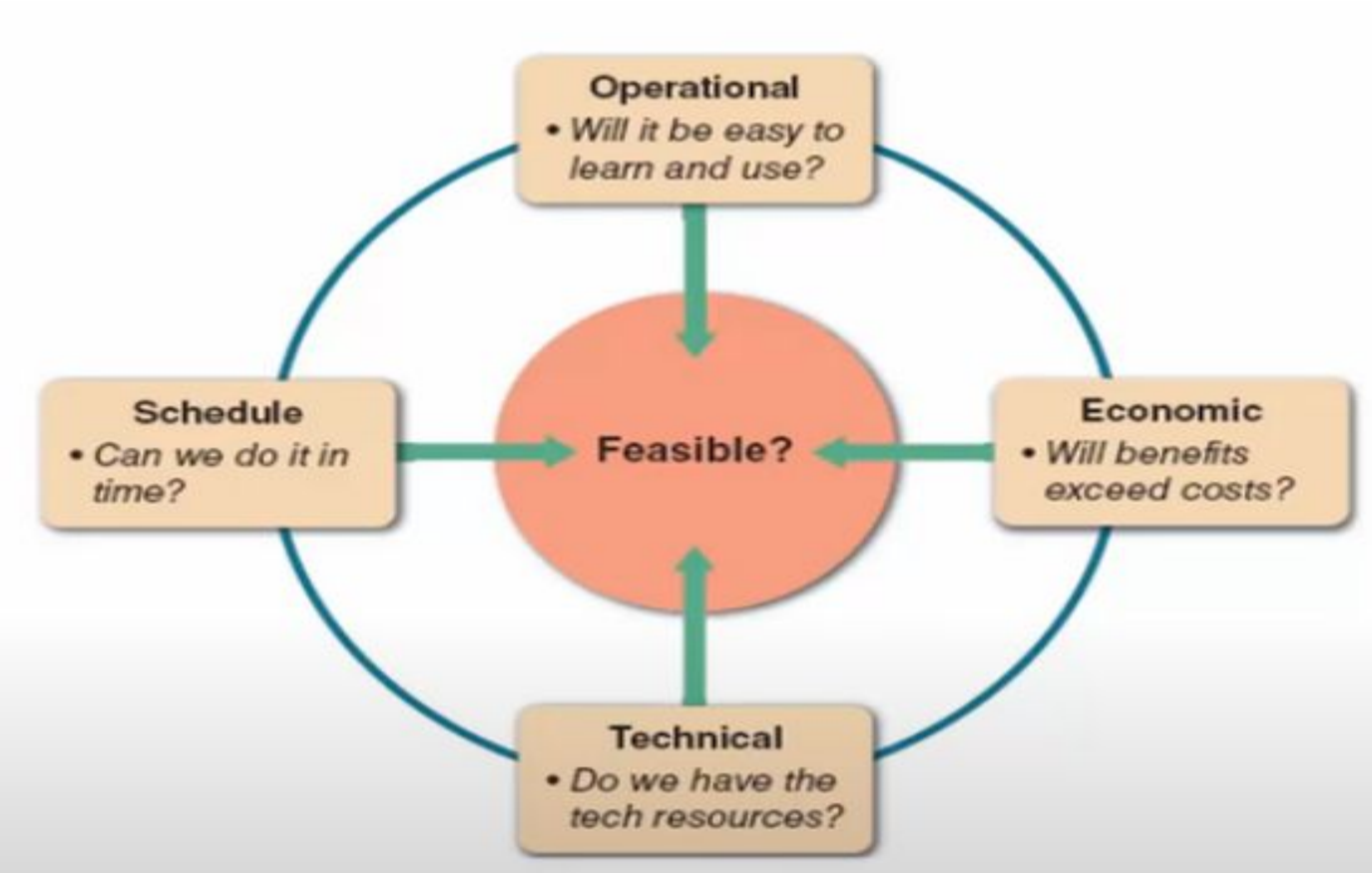

FIGURE 2-14 A feasibility study examines operational, technical, economic, and schedule factors.

Overview of Feasibility (Cont.)

- **Operational Feasibility**
  - Does management support the project?
    - Do users support the project?
    - Is the current system well liked and effectively used?
    - Do users see the need for change?
  - Will the new system result in a workforce reduction?
    - If so, what will happen to affected employees?
  - Will the new system require training for users?
    - If so, is the company prepared to provide the necessary resources for training current employees?
  - Will users be involved in planning the new system right from the start?

Overview of Feasibility (Cont.)

- **Operational Feasibility** (Cont.)
  - Will the new system place any new demands on users or require any operating changes?
    - For example:
      - Will any information be less accessible or produced less frequently?
      - Will performance decline in any way? If so, will an overall gain to the organization outweigh individual losses?
  - Will customers experience adverse effects in any way, either temporarily or permanently?
  - Will any risk to the company's image or goodwill result?
  - Does the development schedule conflict with other company priorities?
  - Do legal or ethical issues need to be considered?

Overview of Feasibility (Cont.)

- **Technical Feasibility**
  - Does the company have the necessary hardware, software, and network resources?
    - If not, can those resources be acquired without difficulty?
  - Does the company have the needed technical expertise?
    - If not, can it be acquired?
  - Does the proposed platform have sufficient capacity for future needs?
    - If not, can it be expanded?

Overview of Feasibility (Cont.)

- **Technical Feasibility** (Cont.)
  - Will a prototype be required?
  - Will the hardware and software environment be reliable?
  - Will it integrate with other company information systems, both now and in the future?
  - Will it interface properly with external systems operated by customers and suppliers?
  - Will the combination of hardware and software supply adequate performance?
  - Do clear expectations and performance specifications exist?
  - Will the system be able to handle future transaction volume and company growth?

Overview of Feasibility (Cont.)

- **Economic Feasibility**
  - Costs for people, including IT staff and users
  - Costs for hardware and equipment
  - Cost of software, including in-house development as well as purchases from vendors
  - Cost for formal and informal training, including peer-to-peer support
  - Cost of licenses and fees
  - Cost of consulting expenses
  - Facility costs
  - The estimated cost of not developing the system or postponing the project

- **Tangible Benefits**
  - A new scheduling system that reduces overtime
  - An online package tracking system that improves service and decreases the need for clerical staff
  - A sophisticated inventory control system that cuts excess inventory and eliminates production delays
- **Intangible Benefits**
  - A user-friendly system that improves employee job satisfaction
  - A sales tracking system that supplies better information for marketing decisions
  - A new Web site that enhances the company's image

Overview of Feasibility (Cont.)

- **Schedule Feasibility**
  - Can the company or the IT team control the factors that affect schedule feasibility?
  - Has management established a firm timetable for the project?
  - What conditions must be satisfied during the development of the system?
  - Will an accelerated schedule pose any risks?
    - If so, are the risks acceptable?
  - Will project management techniques be available to coordinate and control the project?
  - Will a project manager be appointed?

Evaluating Feasibility

- Identify and weed out systems requests that are not feasible
- Even if the request is feasible, it might not be necessary
- Requests that are not currently feasible can be resubmitted as new hardware, software, or expertise becomes available

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?
  - 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?
  - 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?

Setting Priorities (Cont.)

- **Discretionary Projects**
  - Projects where management has a choice in implementing them
    - Creating a new report for a user
- **Nondiscretionary Projects**
  - Projects where management has must implement them
    - Adding a report required by federal law
    - Most of these projects are predictable
      - Annual updates to payroll
      - Tax percentages
      - Quarterly changes

Preliminary Investigation Overview

- **Interaction with Managers and Users**
  - Meet with key managers, users, and IT staff to describe the project, explain responsibilities, answer questions, and invite comments
  - Focus on improvements and enhancements, not problems

Preliminary Investigation Overview

(Cont.)

FIGURE 2-15 Model of a preliminary investigation. Notice the importance of fact-finding in each of the four areas.

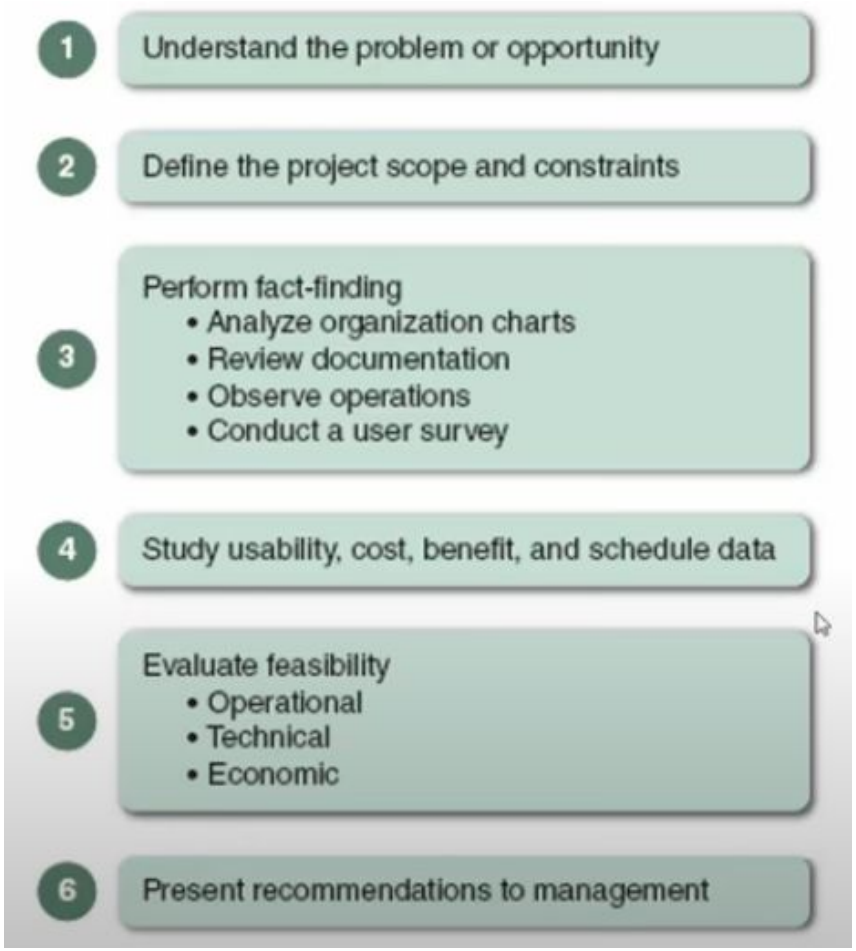

FIGURE 2-16 Six main steps in a typical preliminary investigation.

Preliminary Investigation Overview
(Cont.)

- **Step 1: Understand the Problem or Opportunity**
  - Develop a business profile that describes business processes and functions
  - Understand how modifications will affect business operations and other information systems
  - Determine which departments, users, and business processes are involved
  - Systems request may not reveal an underlying problem
  - Consider using a fishbone diagram

Preliminary Investigation Overview
(Cont.)

- **Step 2: Define the Project Scope and Constraints**
  - Define the specific boundaries, or extent, of the project
  - Define project scope by creating a list with sections called Must Do, Should Do, Could Do, and Won't Do
  - Define project scope as clearly as possible to avoid project creep
  - Identify Constraints
    - A constraint is a requirement or condition that the system must satisfy or an outcome that the system must achieve

Preliminary Investigation Overview
(Cont.)

- **Step 3: Perform Fact-Finding**
  - Gather data about project usability, costs, benefits, and schedules
  - Analyze organization charts
    - Understand the functions and identify people you want to interview

Conduct Interviews

1. Determine the people to interview
2. Establish objectives for the interview
3. Develop interview questions
4. Prepare for the interview
5. Conduct the interview
6. Document the interview
7. Evaluate the interview

Preliminary Investigation Overview
(Cont.)

- **Step 3: Perform Fact-Finding** (Cont.)
  - Review Documentation
    - Investigate the current system documentation
    - Check with users to confirm that you are receiving accurate and complete information
  - Observe Operations
    - See how workers carry out typical tasks
    - Sample inputs and outputs of the system

FIGURE 2-20 Sometimes, an analyst can get a better understanding of a system by watching actual operations.

Preliminary Investigation Overview
(Cont.)

- **Step 3: Perform Fact-Finding** (Cont.)
  - Conduct a User Survey
    - A survey is not as flexible as a series of interviews, but it is less expensive, generally takes less time, and can involve a broad cross-section of people
  - Analyze the Data
    - Systems analyst might use a Pareto chart
    - Analysts may use an XY chart to identify if there is a correlation of variables

Preliminary Investigation Overview

(Cont.)

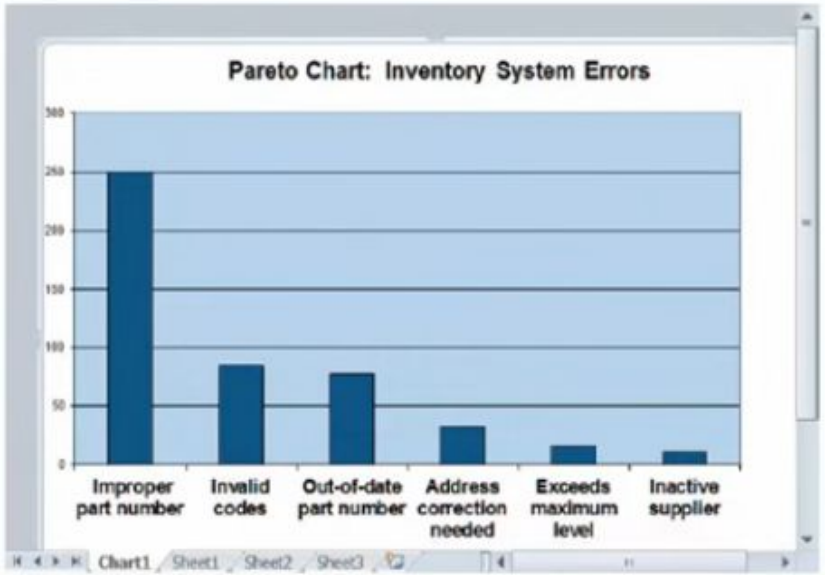

FIGURE 2-21 A Pareto chart displays the causes of a problem, in priority order, so an analyst can tackle the most important causes first. In this example, the part number issue would be the obvious starting point.

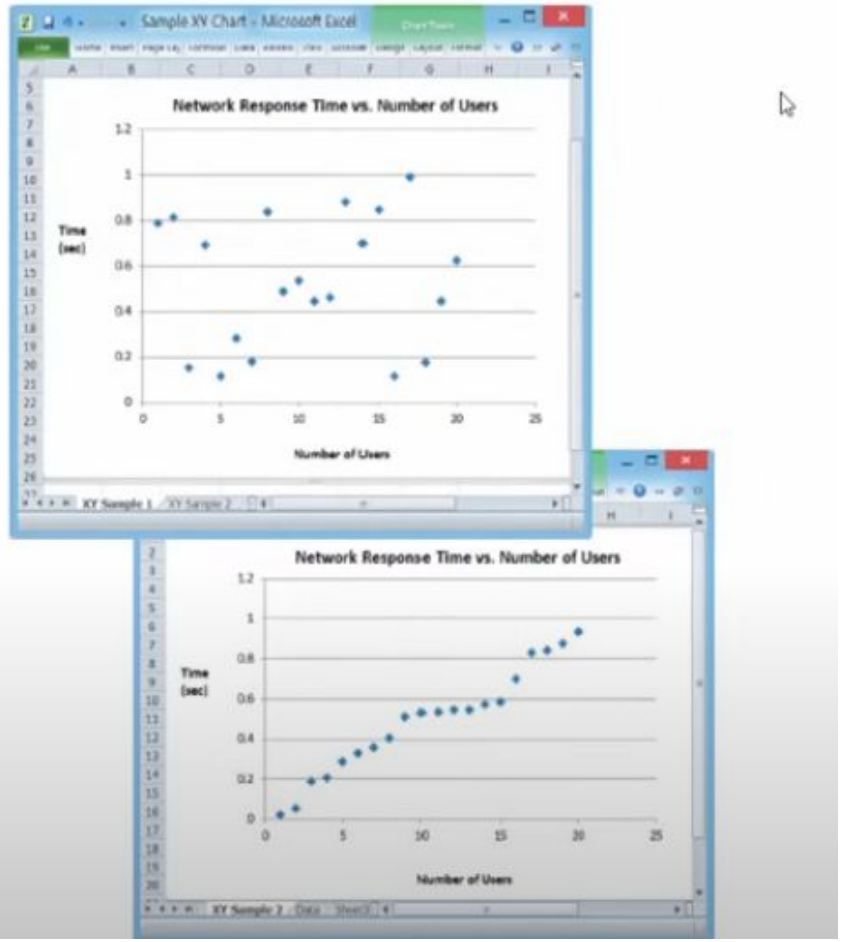

FIGURE 2-22 An XY chart shows correlation between variables, which is very important in problem solving. Conversely, a *lack* of correlation suggests that the variables are independent, and that you should look elsewhere for the cause.

Preliminary Investigation Overview
(Cont.)

- **Step 4: Analyze Project Usability, Cost, Benefit, and Schedule Data**
  - What information must you obtain, and how will you gather and analyze the information?
  - 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 tabulate the results?
  - How much will it cost to analyze the information and prepare a report with findings and recommendations?

Preliminary Investigation Overview
(Cont.)

- Step 5: Evaluate Feasibility
  - OPERATIONAL FEASIBILITY
    - Review of user needs, requirements, and expectations
    - Look for areas that might present problems for system users and how they might be resolved
  - TECHNICAL FEASIBILITY
    - Identify the hardware, software, and network resources needed to develop, install, and operate the system
    - Develop a checklist that will highlight technical costs and concerns
  - ECONOMIC FEASIBILITY
    - Apply the financial analysis tools
    - The cost-benefit data will be important
  - SCHEDULE FEASIBILITY
    - Include stakeholder expectations regarding acceptable timing and completion dates

Preliminary Investigation Overview
(Cont.)

- **Step 6: Present Results and Recommendations to Management**
  - Typical Report Includes:
    - Introduction
    - Systems Request Summary
    - Findings
    - Case for Action
    - Project Roles
    - Time and Costs Estimates
    - Expected Benefits
    - Appendix

- Sources:

[1] Systems Analysis and Design Elevent Edition (Shelly Cashman Series) authors Tilley / Rosenblatt PUblisher Cengage ISBN 978-1-337-68715-7.