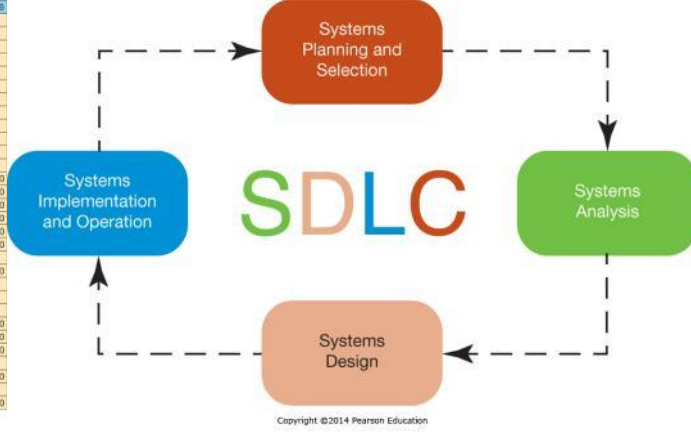


**Making the Business Case for an Information System**

	2012	2013	2014	2015	2016
<b>Costs</b>					
Non-recurring					
Hardware	\$ 20,000				
Software	\$ 7,500				
Networking	\$ 4,500				
Infrastructure	\$ 7,500				
Personnel	\$100,000				
Recurring					
Hardware	\$ 500	\$ 1,000	\$ 2,500	\$ 15,000	
Software	\$ 500	\$ 500	\$ 1,000	\$ 2,500	
Networking	\$ 250	\$ 250	\$ 500	\$ 1,000	
Service fees	\$ 250	\$ 250	\$ 250	\$ 500	
Infrastructure	\$ 250	\$ 250	\$ 500	\$ 1,500	
Personnel	\$ 60,000	\$ 62,500	\$ 70,000	\$ 90,000	
<b>Total costs</b>	<b>\$139,500</b>	<b>\$ 61,500</b>	<b>\$ 64,750</b>	<b>\$ 74,750</b>	<b>\$110,500</b>
<b>Benefits</b>					
Increased sales	\$ 20,000	\$ 50,000	\$ 80,000	\$115,000	\$175,000
Error reduction	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000
Cost reduction	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
<b>Total benefits</b>	<b>\$135,000</b>	<b>\$165,000</b>	<b>\$195,000</b>	<b>\$230,000</b>	<b>\$290,000</b>
<b>Net costs/benefits</b>	<b>\$ (4,500)</b>	<b>\$103,500</b>	<b>\$130,250</b>	<b>\$155,250</b>	<b>\$179,500</b>



Customer Information Entry Today: 11-OCT-14

**CUSTOMER INFORMATION**

Customer Number: 1273

Name: Contemporary Designs

Address: 123 Oak Street

City: Austin

State: TX

Zip: 28384

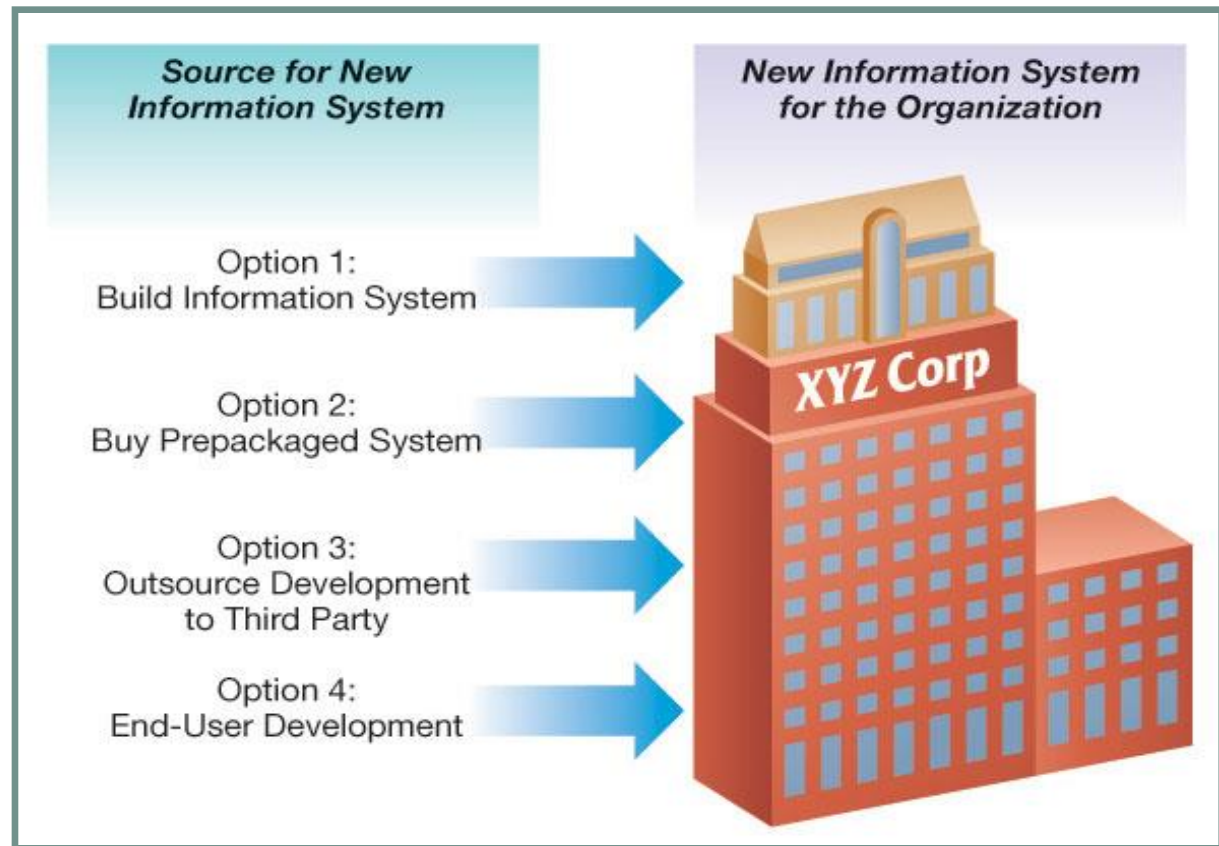
Save Help Exit

# Chapter 9 - Developing and Acquiring Information Systems

Managers from across organizations are involved in developing and acquiring information systems

# Combining Customized and Packaged software

- There are a variety of sources for information systems.

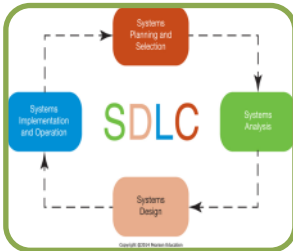


# Chapter 9 Learning Objectives



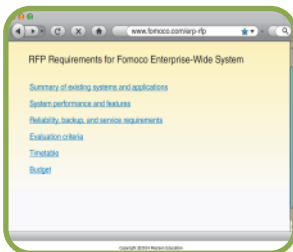
## Making the Business Case

- Describe how to formulate and present the business case for technology investments.



## The Systems Development Process

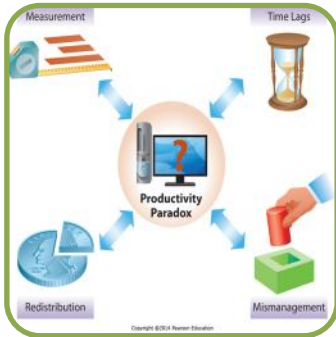
- Describe the systems development life cycle and its various phases.



## Acquiring Information Systems

- Explain how organizations acquire systems via external acquisition and outsourcing.

# Making the Business Case



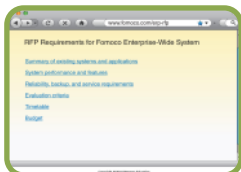
## Making the Business Case

Describe how to formulate and present the business case for technology investments.



## Cyberwar and Cyberterrorism

Describe and explain the differences between cyberwar and cyberterrorism.



## Acquiring Information Systems

Explain how organizations acquire systems via external acquisition and outsourcing.

# Productivity Gains

- Easy to identify costs with developing an IS
- How do you measure productivity gains?
- Why hasn't productivity increased at the rate of IS investments?

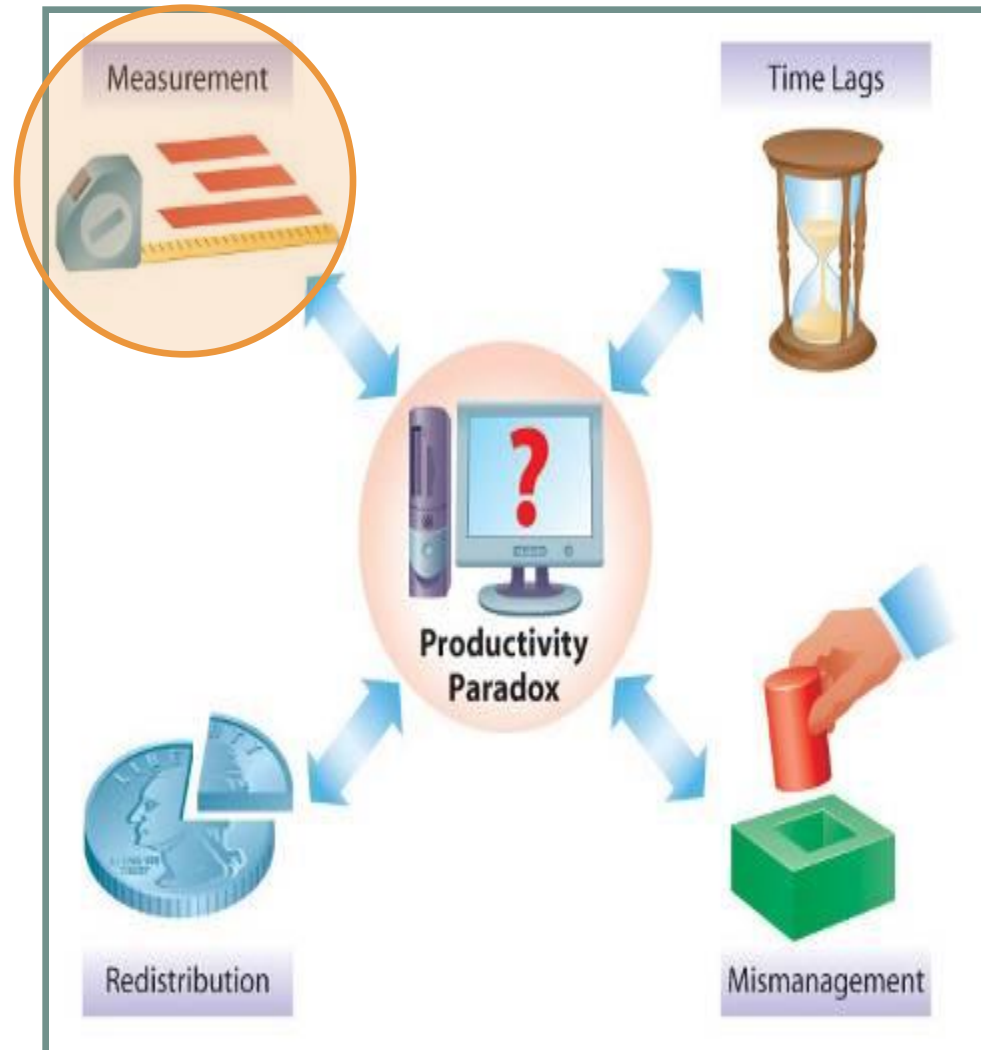
# The Productivity Paradox

- Give an example of how information systems may be used in unintended ways.



# Measurement Problems

- Give an example of how the wrong things can be measured



# Time Lags

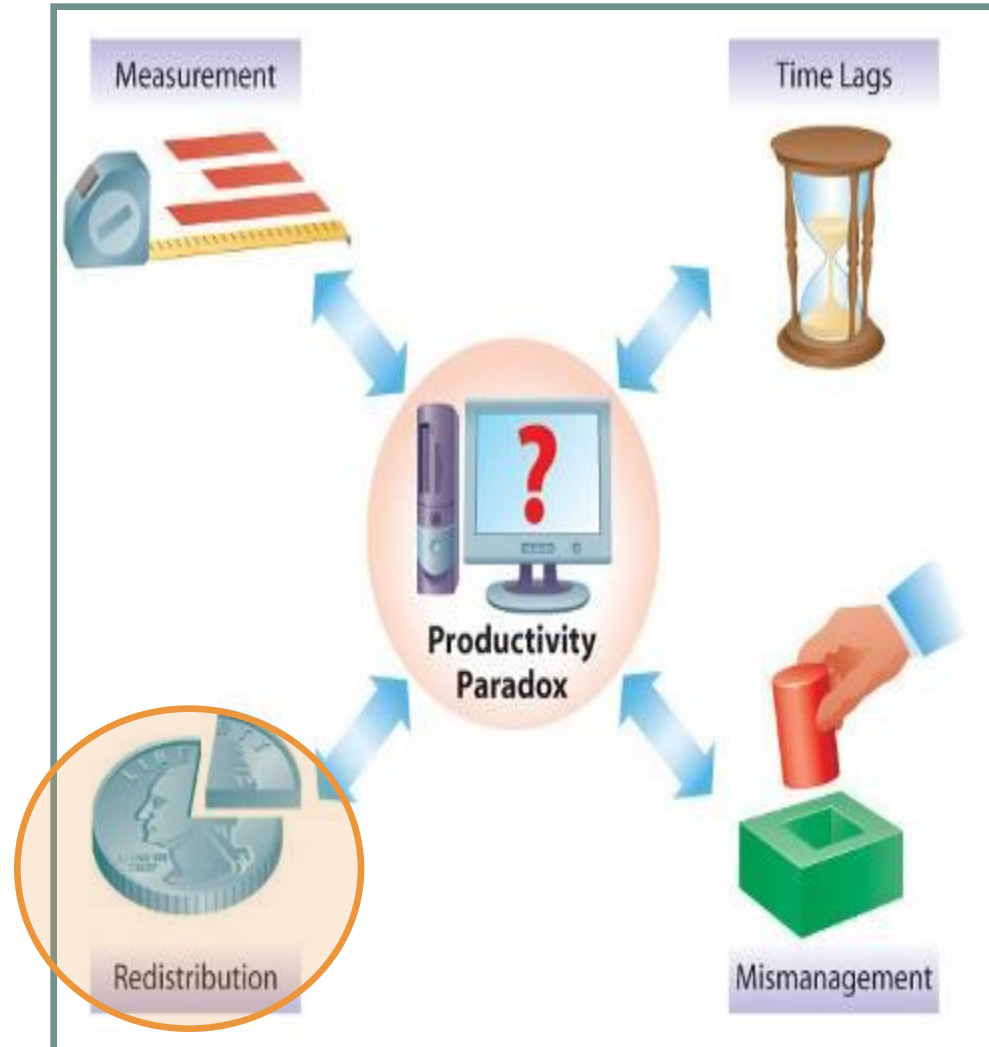
- When can the benefits of an information system lag behind the realized benefits?





# Redistribution

- If an information systems simply redistributes the pieces of the pie rather than make the pie bigger, does it create any value?



# Mismanagement

- Can a good information system overcome a bad business model?

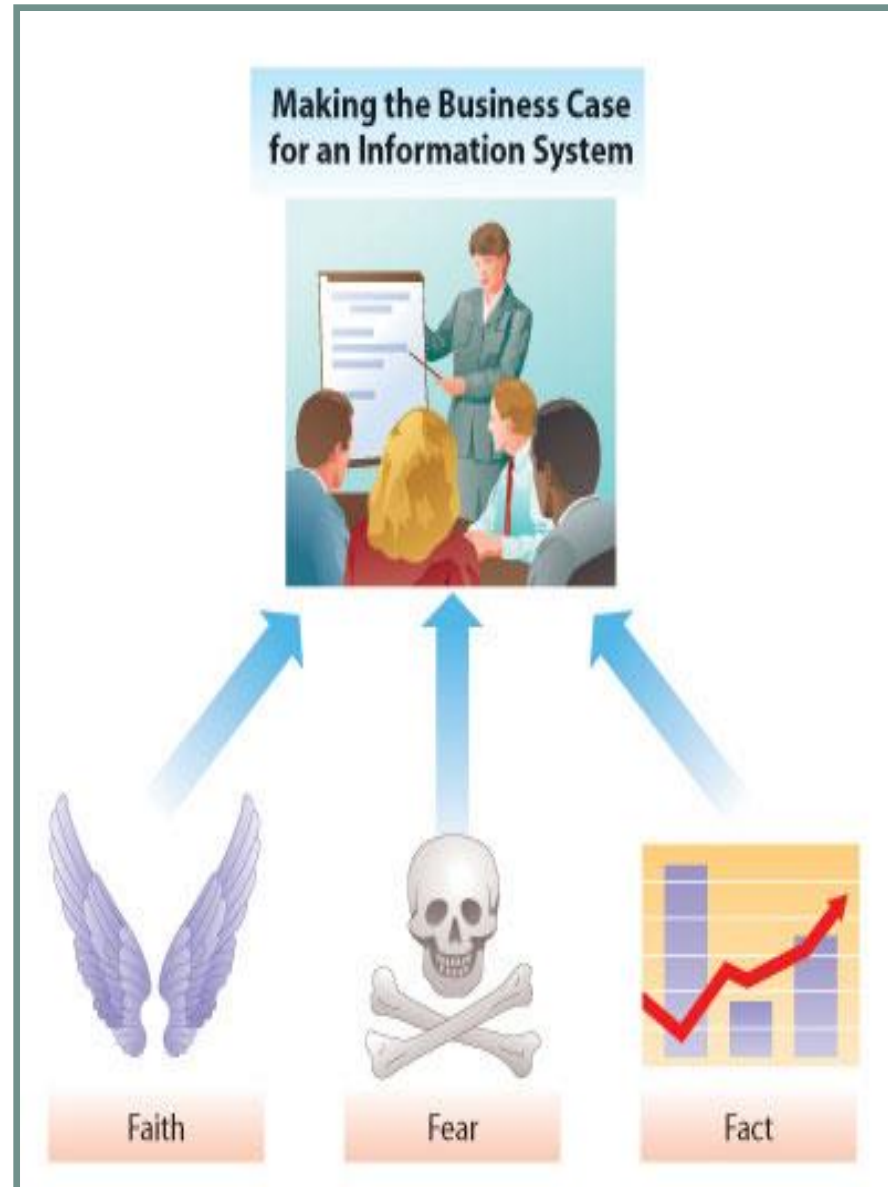


# Productivity Business Case

<b>Employees</b>	<b>20,000</b>
<b>Average Salary</b>	<b>\$42,523</b>
<b>Total Salary</b>	<b>\$850,460,000</b>
<b>10% Productivity Increase</b>	<b>\$85,046,000</b>
<b>Cost of Project</b>	<b>\$4,000,000</b>

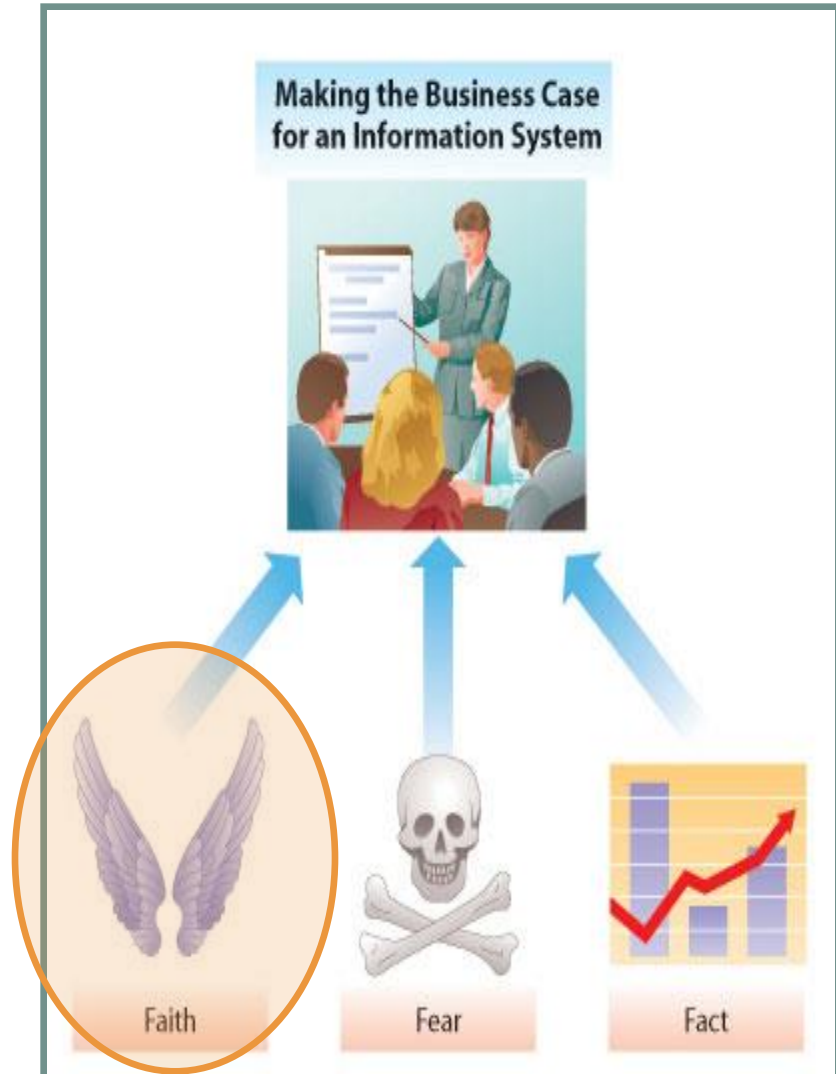
<b>Employees</b>	<b>75</b>
<b>Average Salary</b>	<b>\$37,520</b>
<b>Total Salary</b>	<b>\$2,814,000</b>
<b>10% Headcount Reduction</b>	<b>\$281,400</b>
<b>Cost of Project</b>	<b>\$400,000</b>

# Making a Successful Business Case



# Arguments Based on Faith

- Do you need a cost benefits analysis for an argument based on faith?

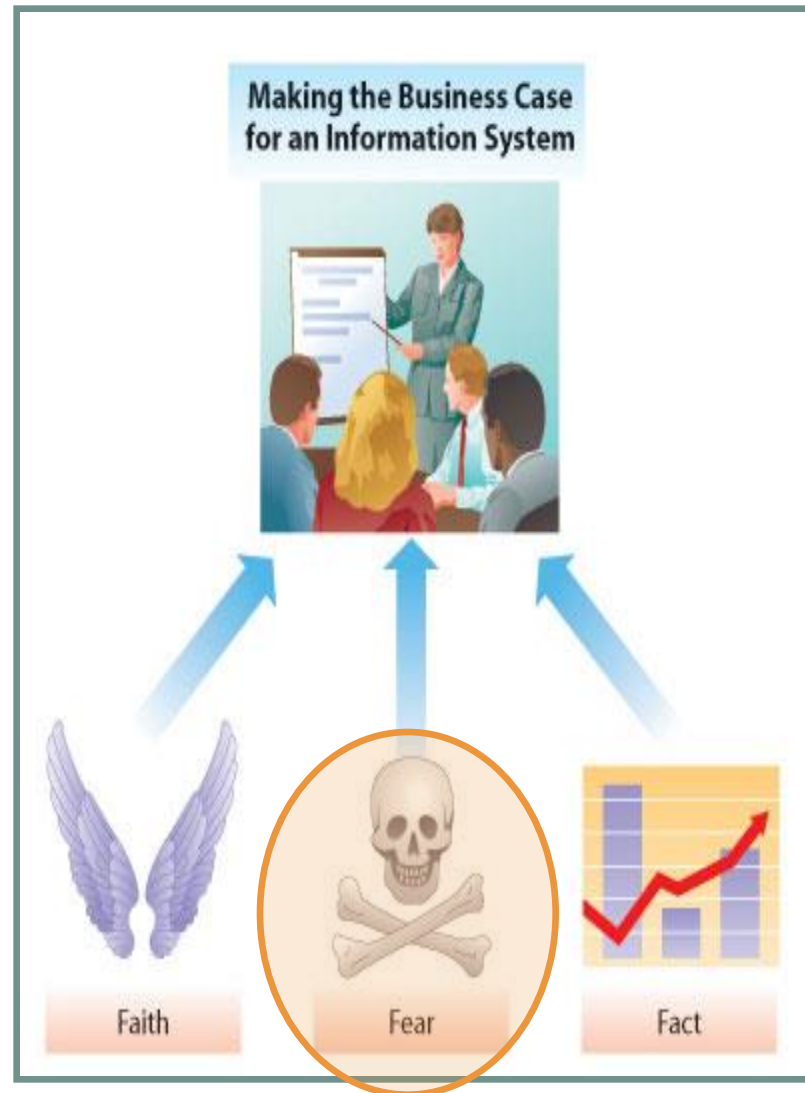


# PROFS to cc:Mail Migration

- Manager struggled to make business case based on fact
  - Sticking with PROFS was less expensive than migrating to cc:Mail
- cc:Mail migration was necessary to gain support for migration from centralized to distributed world
- Made case on “Faith”, not “Fact”

# Arguments Based on Fear

- Do you need a cost benefits analysis for an argument based on fear?
- Come on, how do you instill “fear” in an organization?



# Scenario

- You are the CIO of a small to mid sized company
- You are meeting with an independent consultant who is trying to get you to hire him to develop a business continuity plan and a disaster recovery plan
- Is a business case based on “Fear” effective?



# Business Continuity and Disaster Recovery

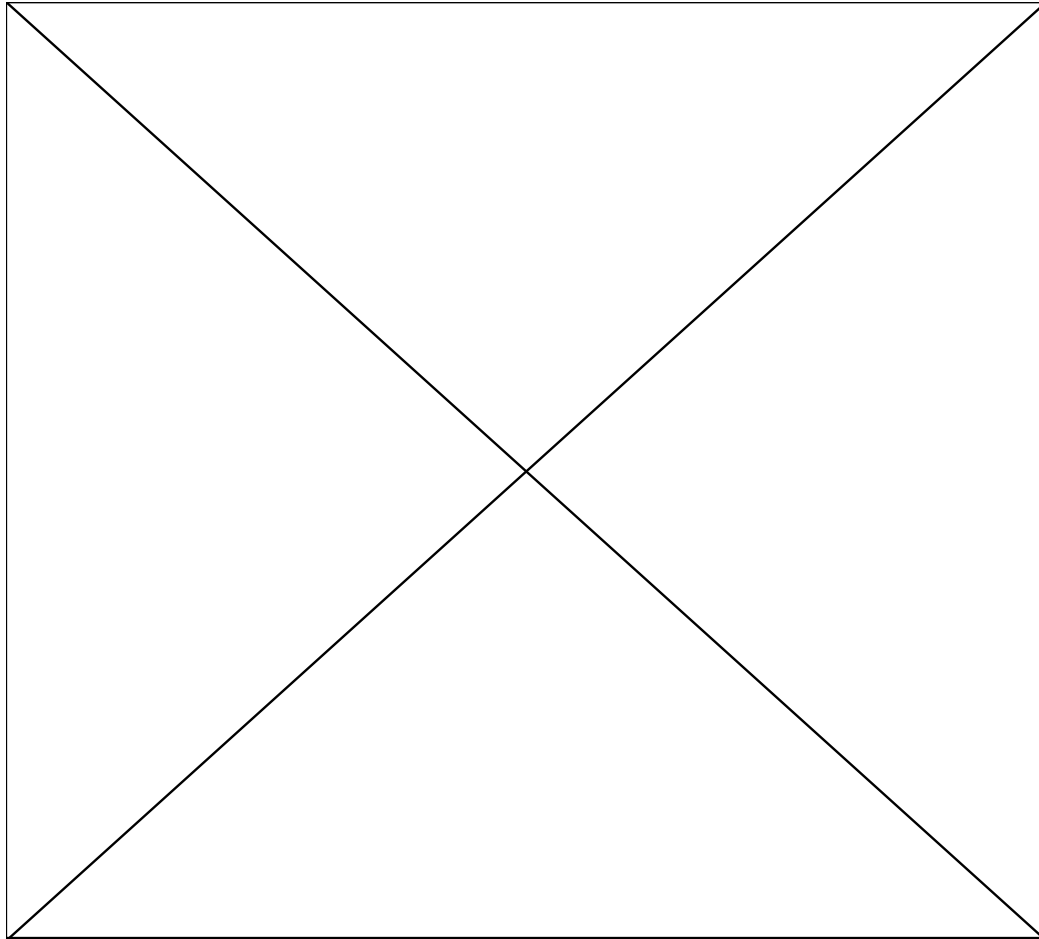
- Catastrophic loss of ability to deliver services from primary location
- Must resume services from alternate location
- Disaster recovery plan driven by the business'
  - Recover time objective (RTO)
  - Recovery point objective (RPO)
- Business Continuity – How you continue to provide essential business services between time of the disaster and the execution of DR plan

# Sobering Statistics

- From the U.S. National Fire Protection Agency and the U.S. Bureau of Labor
  - Nearly 75% of all U.S. businesses have experienced a business interruption
  - 20% of small to medium size businesses suffer a major disaster every five years
  - 43% of US companies never reopen after a disaster and 29% close within three years
  - 93% of companies that suffer a significant data loss are out of business within five years

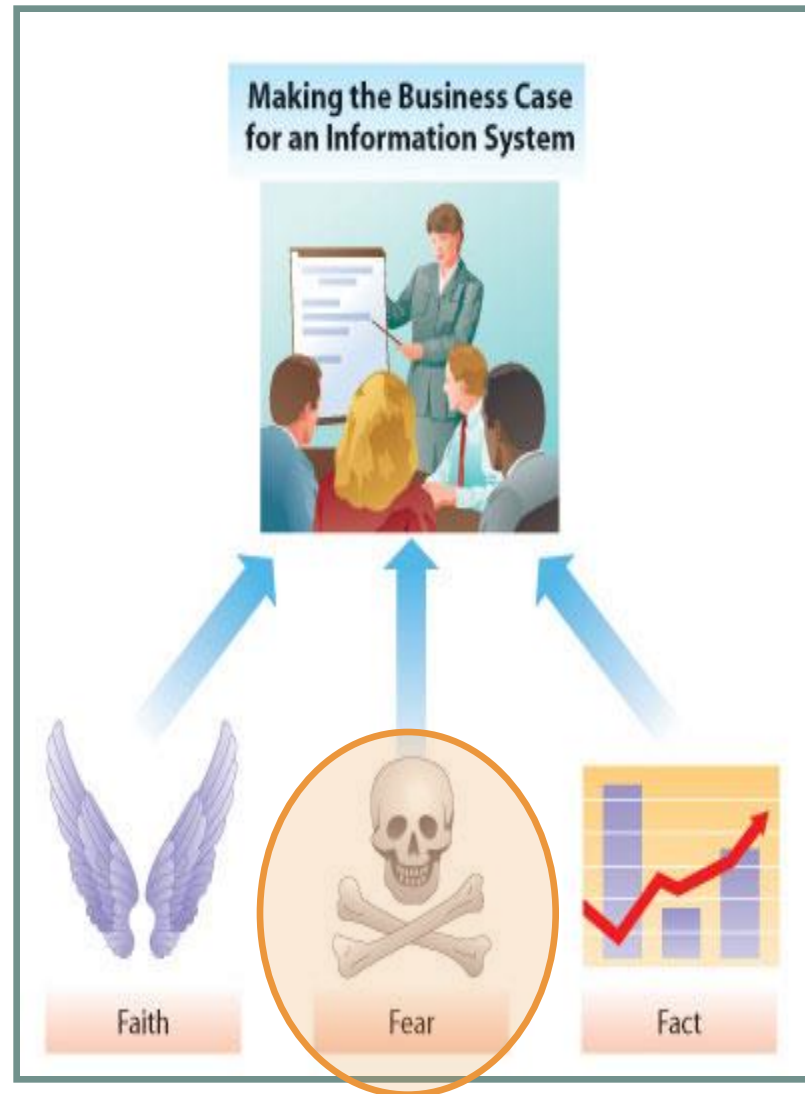
# It's not always what you expect

- It's in not always an earthquake or a hurricane



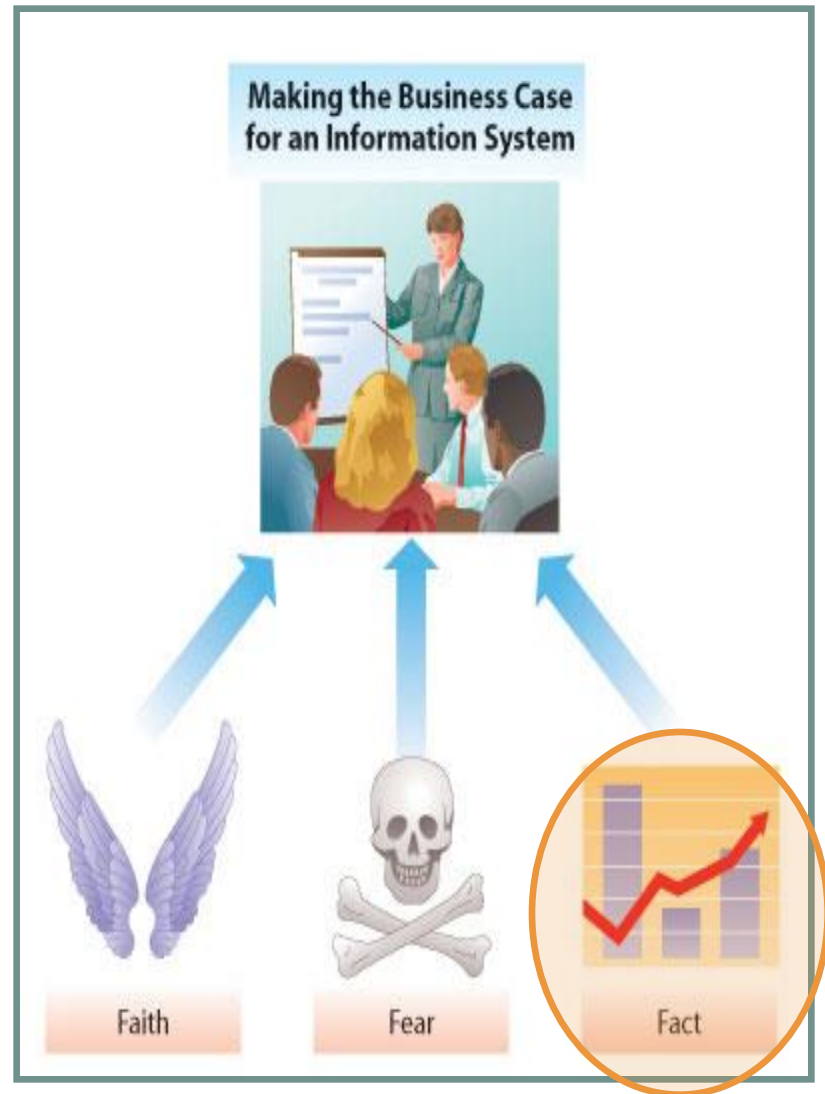
# Arguments Based on Fear

- Do you need a cost benefits analysis for an argument based on fear?



# Arguments Based on Fact

- Do you need a cost benefits analysis for an argument based on fact?



# Cost-Benefit Analysis Example

- Worksheet showing a simplified cost-benefit analysis for a Web-based order fulfillment system.

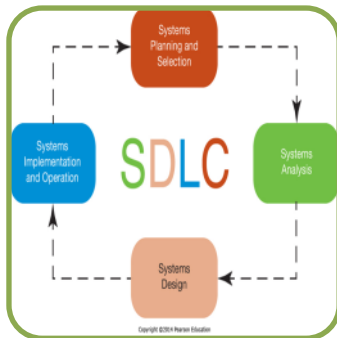
	2010	2011	2012	2013	2014
<b>Costs</b>					
Nonrecurring					
Hardware	\$ 20,000				
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# The Systems Development Process



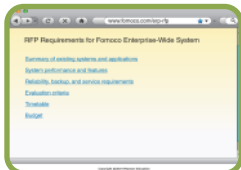
## Making the Business Case

Describe how to formulate and present the business case for technology investments.



## The Systems Development Process

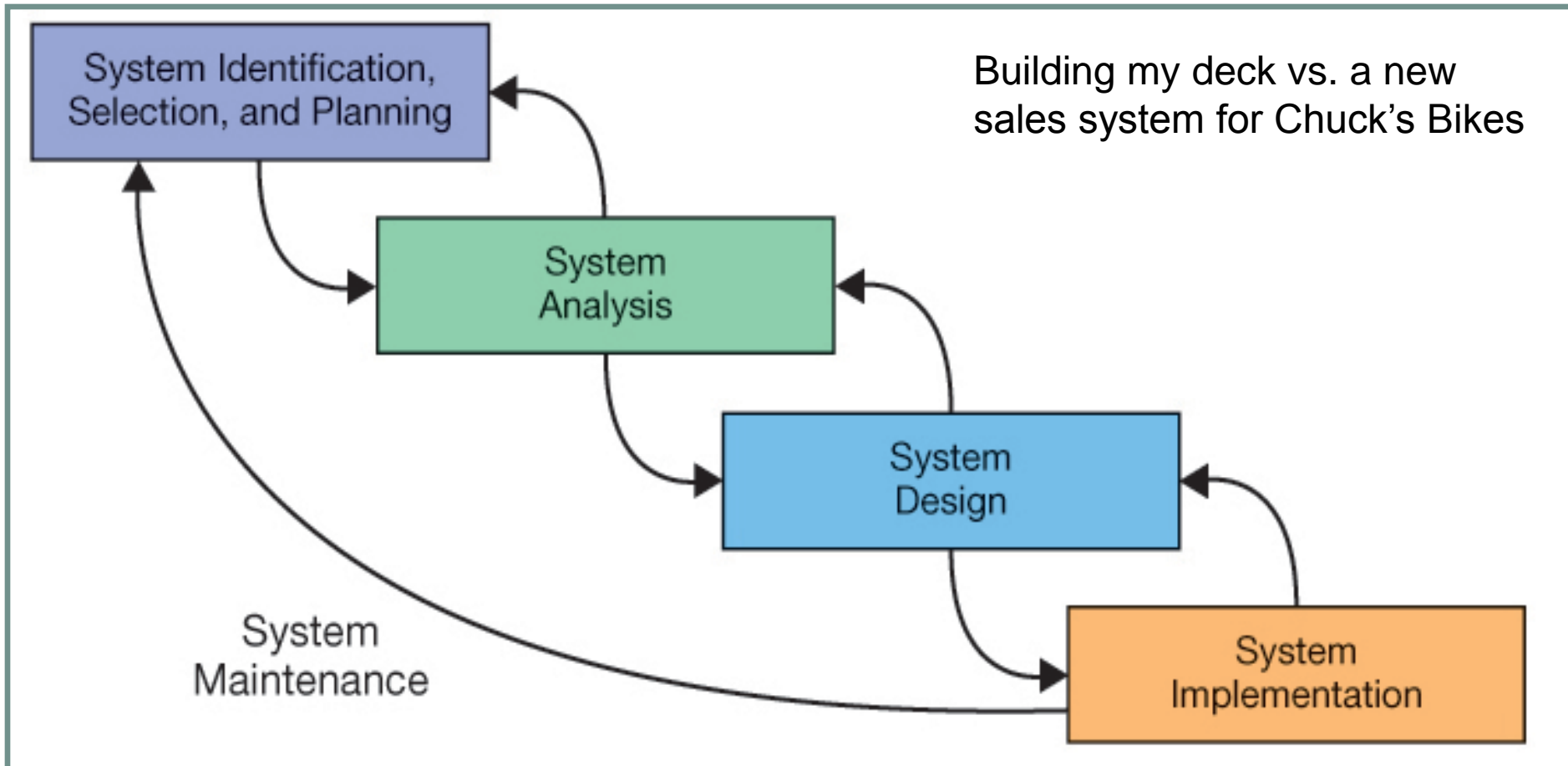
Describe the systems development life cycle and its various phases.



## Acquiring Information Systems

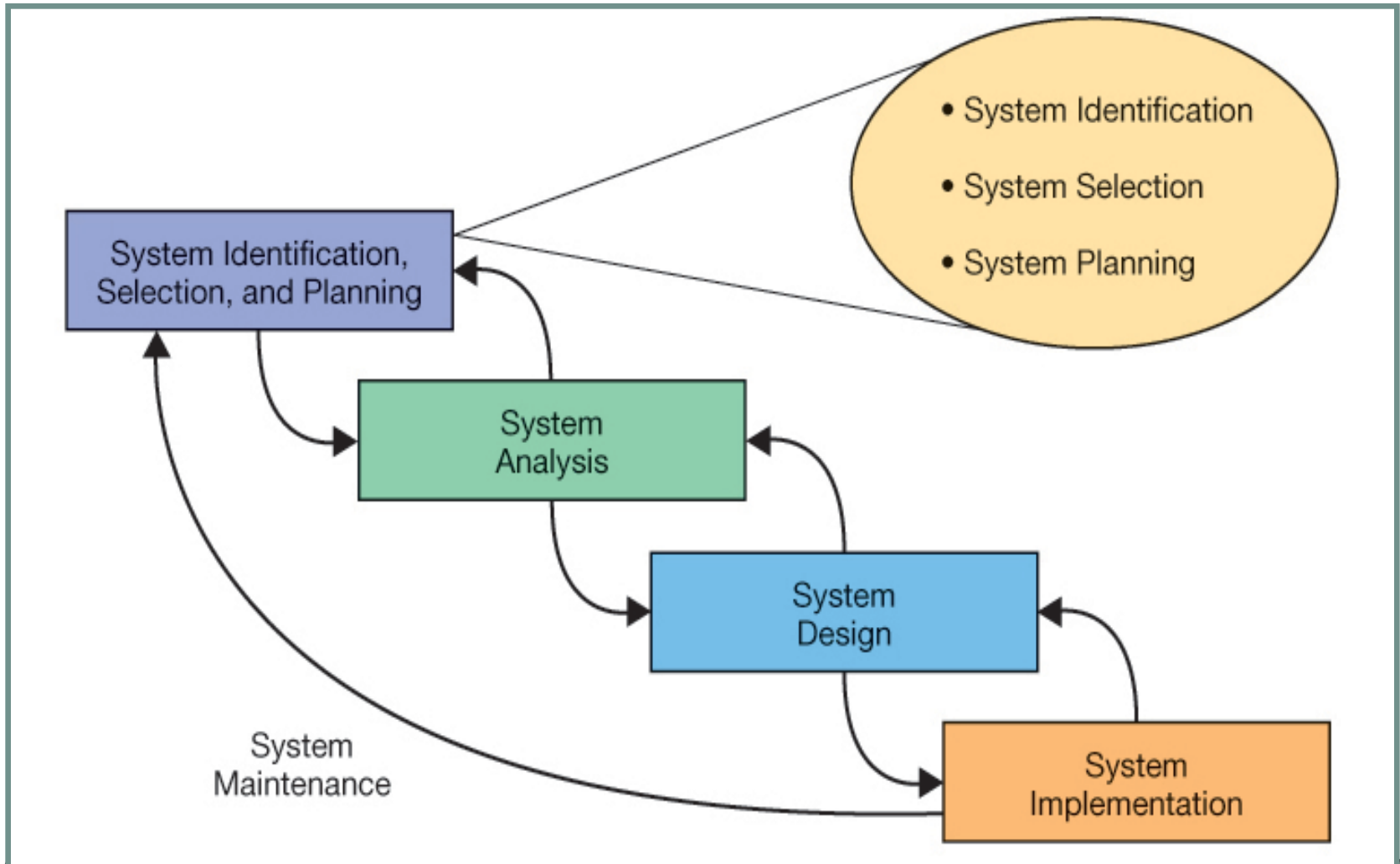
Explain how organizations acquire systems via external acquisition and outsourcing.

# Steps in the Systems Development Process

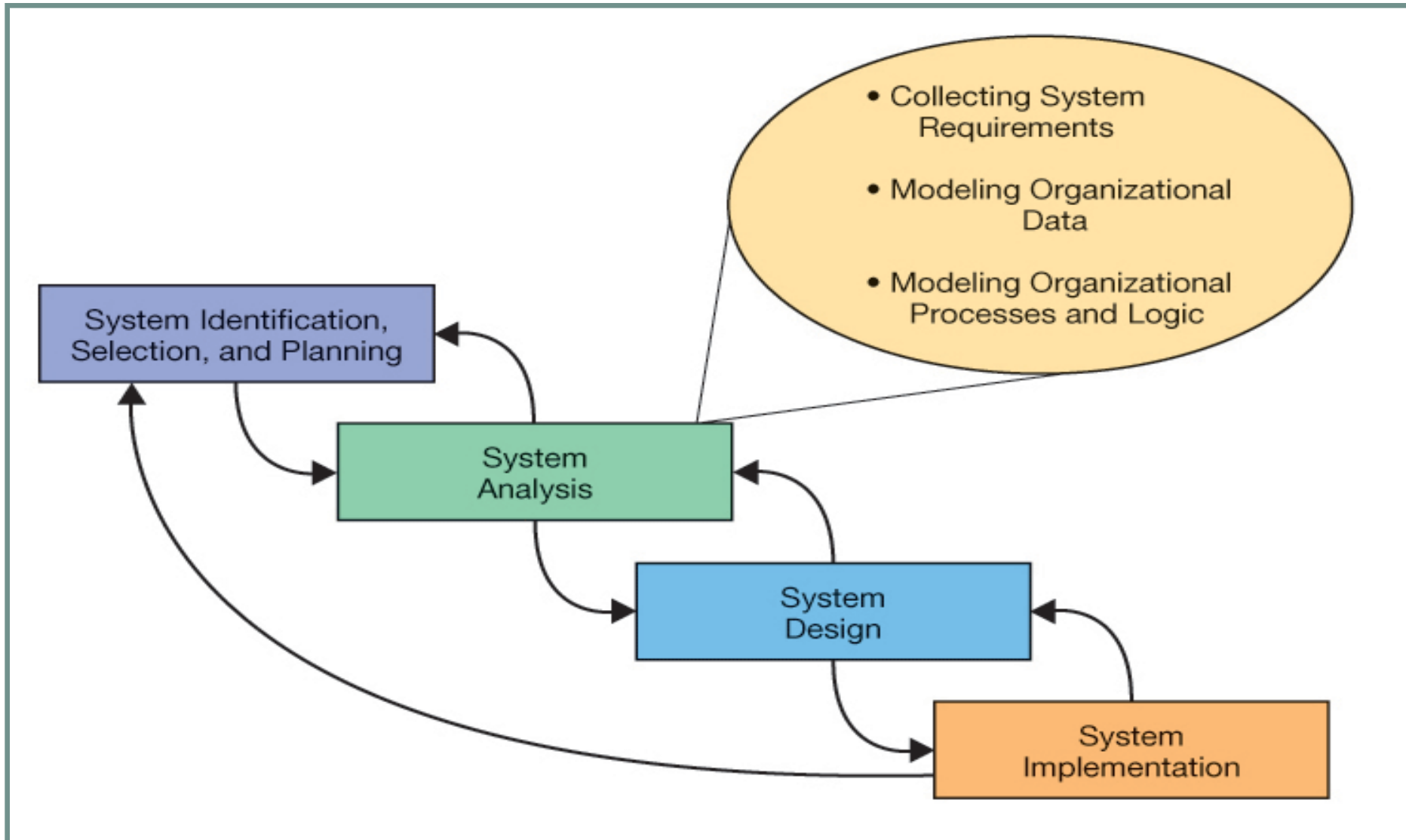




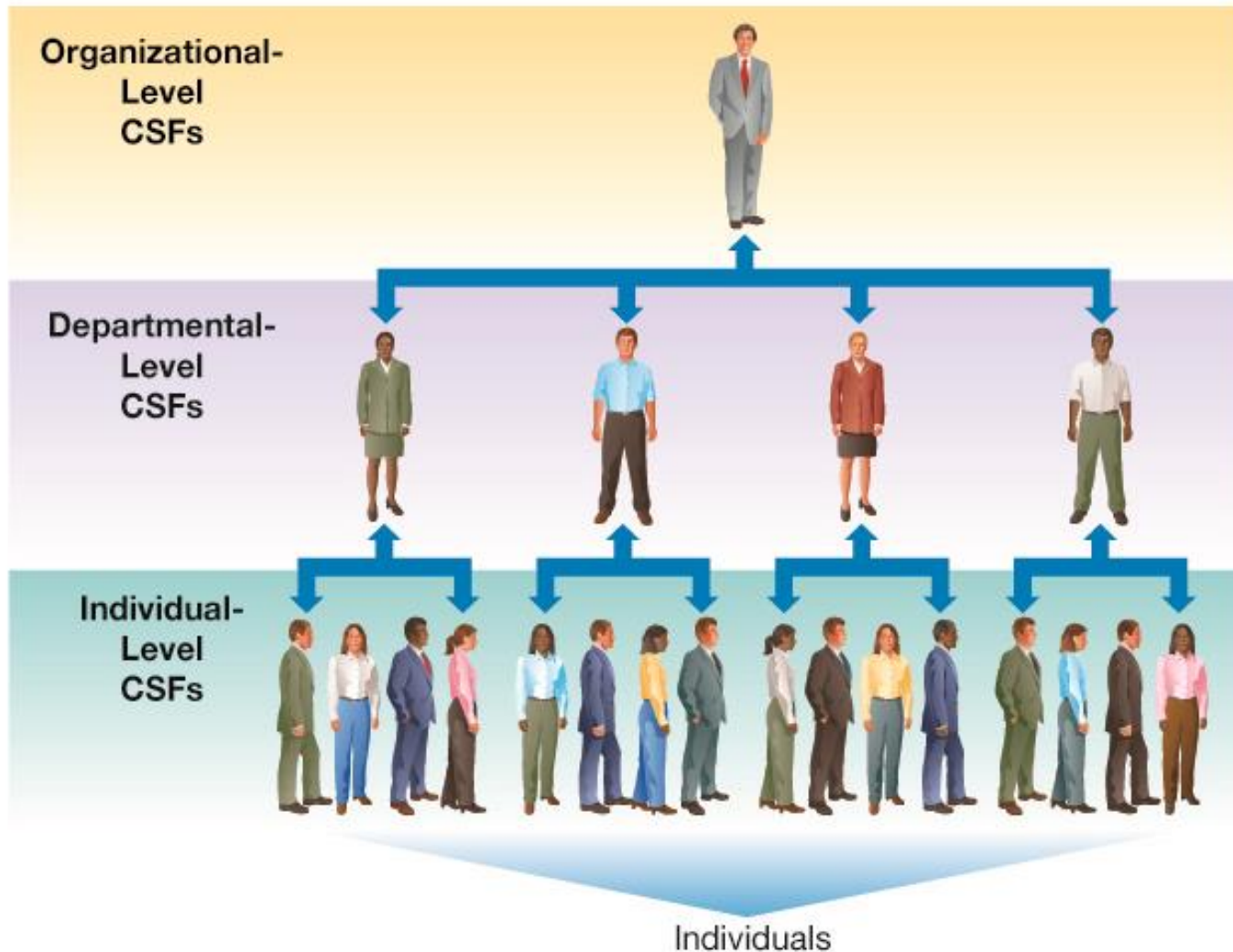
# Phase 1: Systems Identification, Selection and Planning



# Phase 2: Systems Analysis

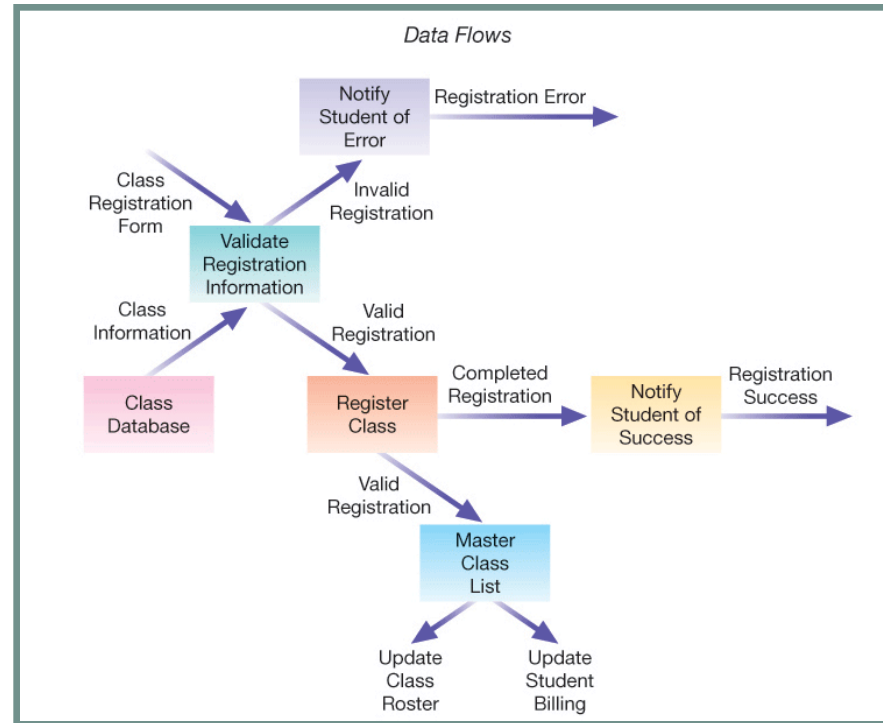


# Critical Success Factors



# System Analysis

## Requirements



## Data

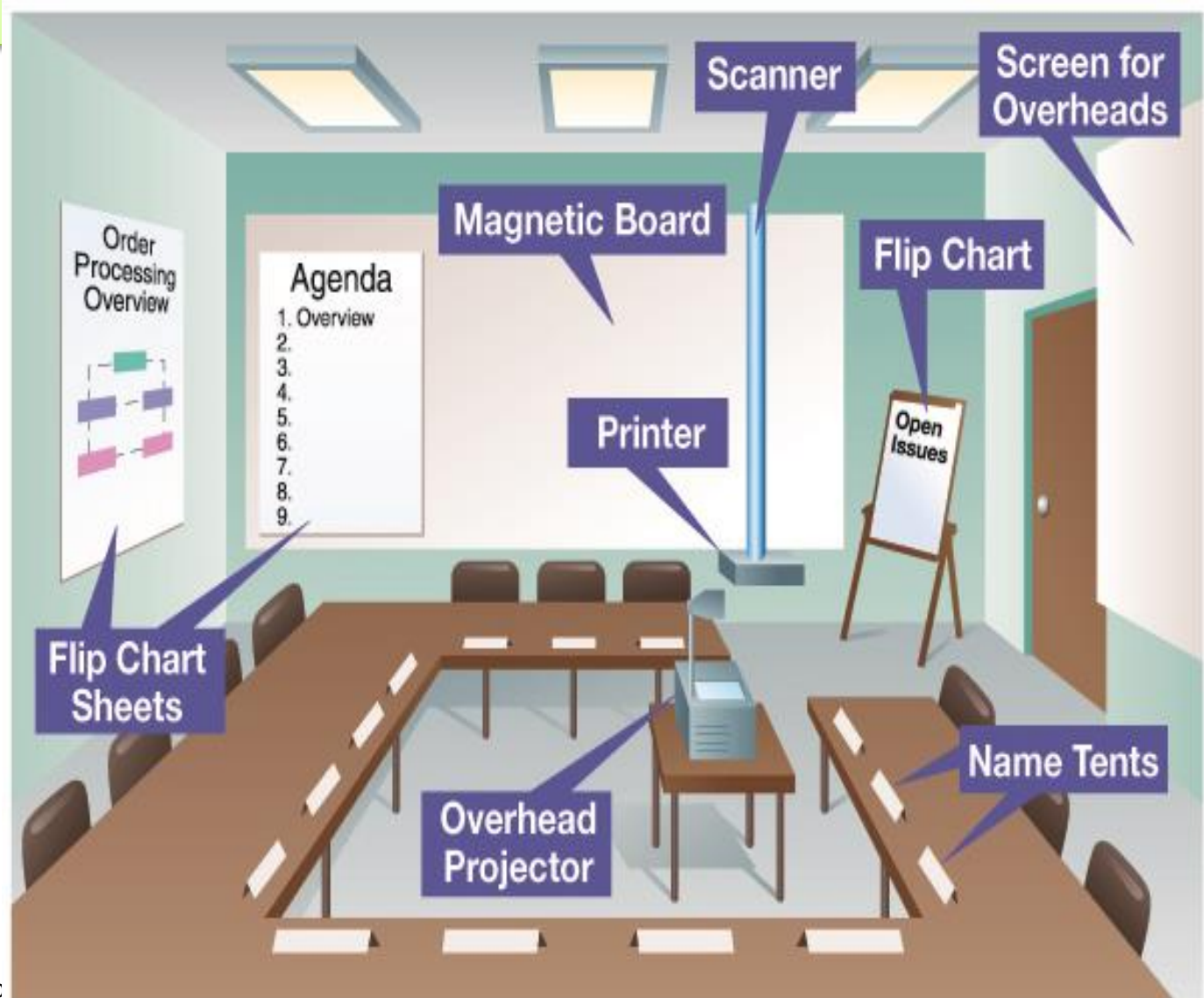
Name	Class	GPA
Patty Nicholls	Senior	3.7
Brett Williams	Grad	2.9
Mary Shide	Fresh	3.2

## Processing Logic

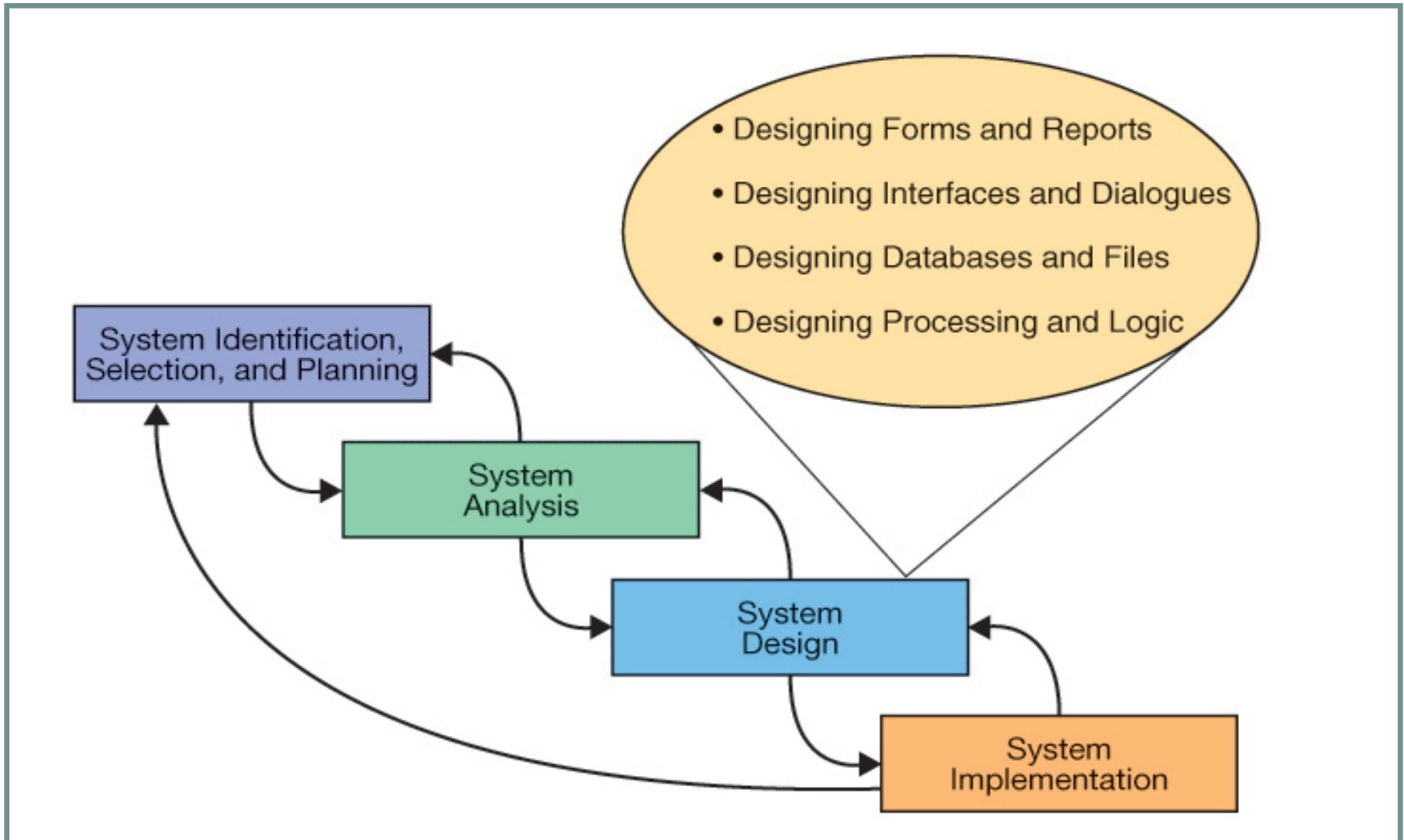
```

i = read (number_of_classes)
total_hours = 0
total_grade = 0
total_gpa = 0
for j = 1 to i do
  begin
    read (course [j], hours [j], grade [j])
    total_hours = total_hours + hours [j]
    total_grade = total_grade + (hours [j] * grade [j])
  end
current_gpa = total_grade / total_hours
  
```

# JAD Session



# Phase 3: System Design



# System Design

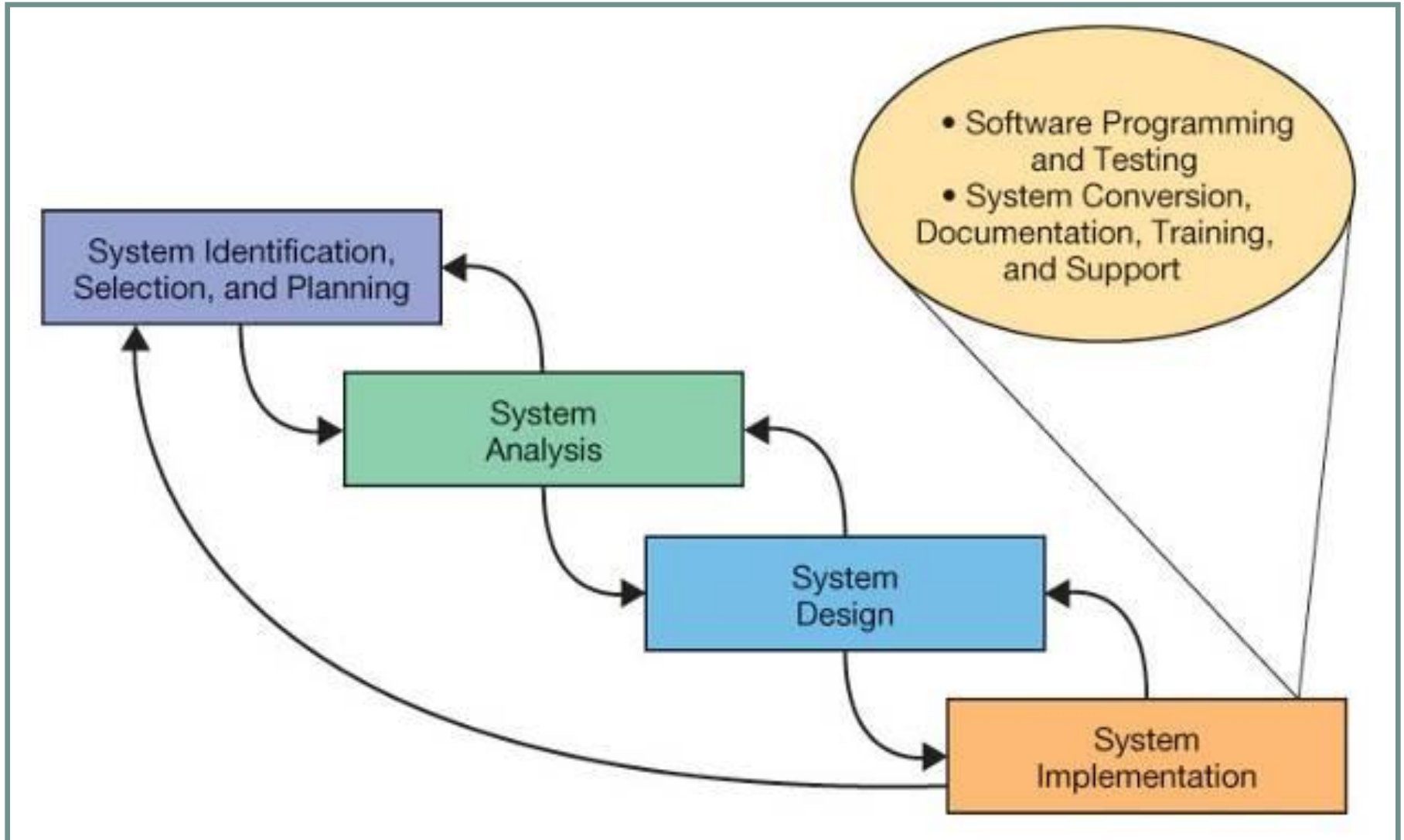
The image displays a system design project with three main components:

- Web Registration Form:** A screenshot of a Yahoo! Mail registration page with fields for First name, Last name, Preferred country (Yahoo! U.S.), Gender, Yahoo! ID, Password, and Re-type password.
- Sales Summary Report:** A table with two columns: REGION and Name. The regions listed are Northwest and Mountain, Midwest and Mid-Atlantic, and New England. Names listed include Wheeler, Spurrier, Powell, Topi, Speier, and Morris.
- Database Table Structure:** A screenshot of Microsoft Access showing the 'Table: Students' in the 'STUDENT.MDB' database. It includes properties (Date Created, Last Updated, Def. Updatable, Record Count) and a list of columns with their types and sizes.

Interfaces

Databases

# Phase 4: System Implementation





# Testing

---

Testing Type	Focus	Performed by
Developmental	Testing the correctness of individual modules and the integration of multiple modules	Programmer
Alpha	Testing of overall system to see whether it meets design requirements	Software tester
Beta	Testing of the capabilities of the system in the user environment with actual data	Actual system users

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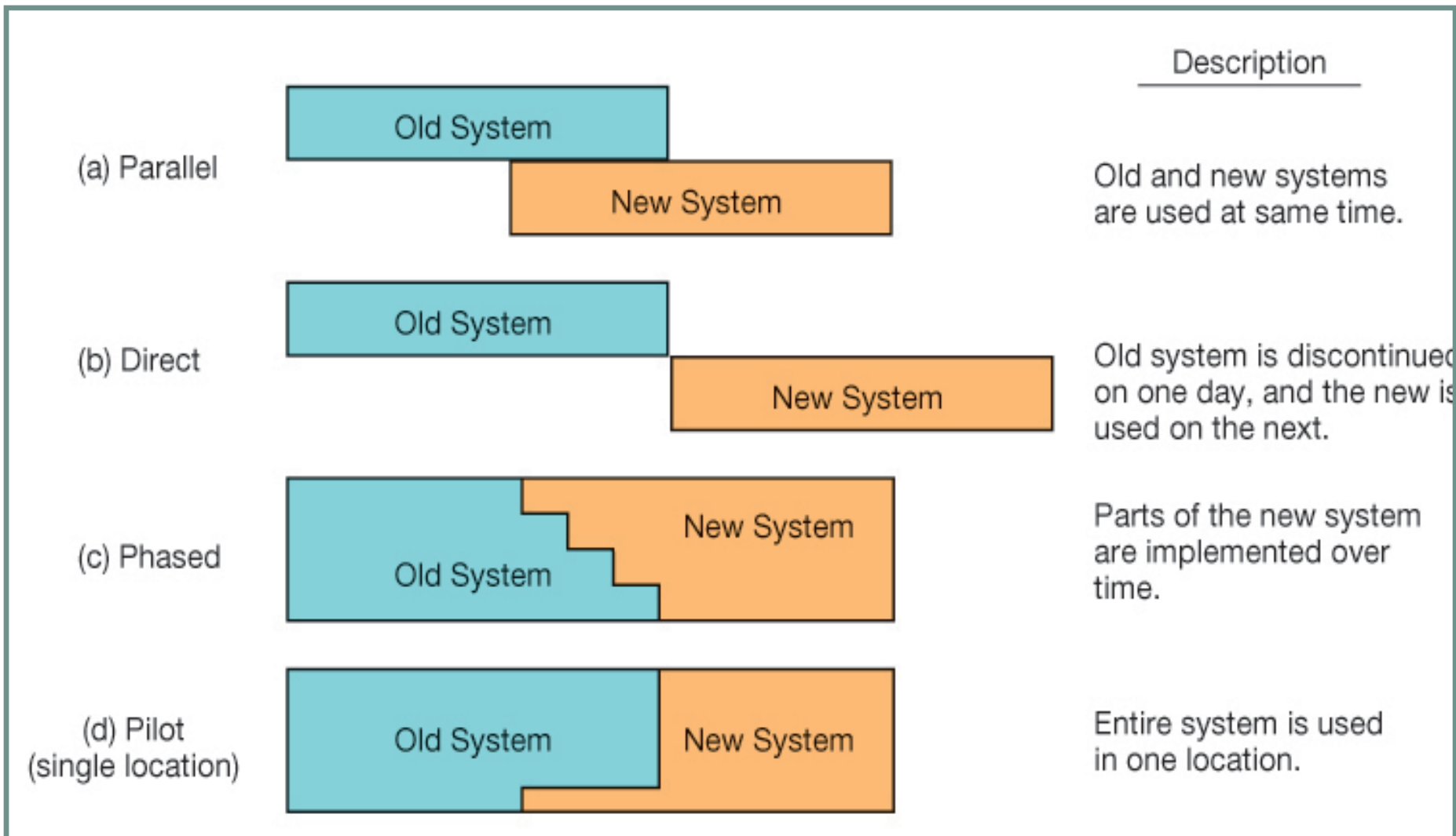
# Training

---

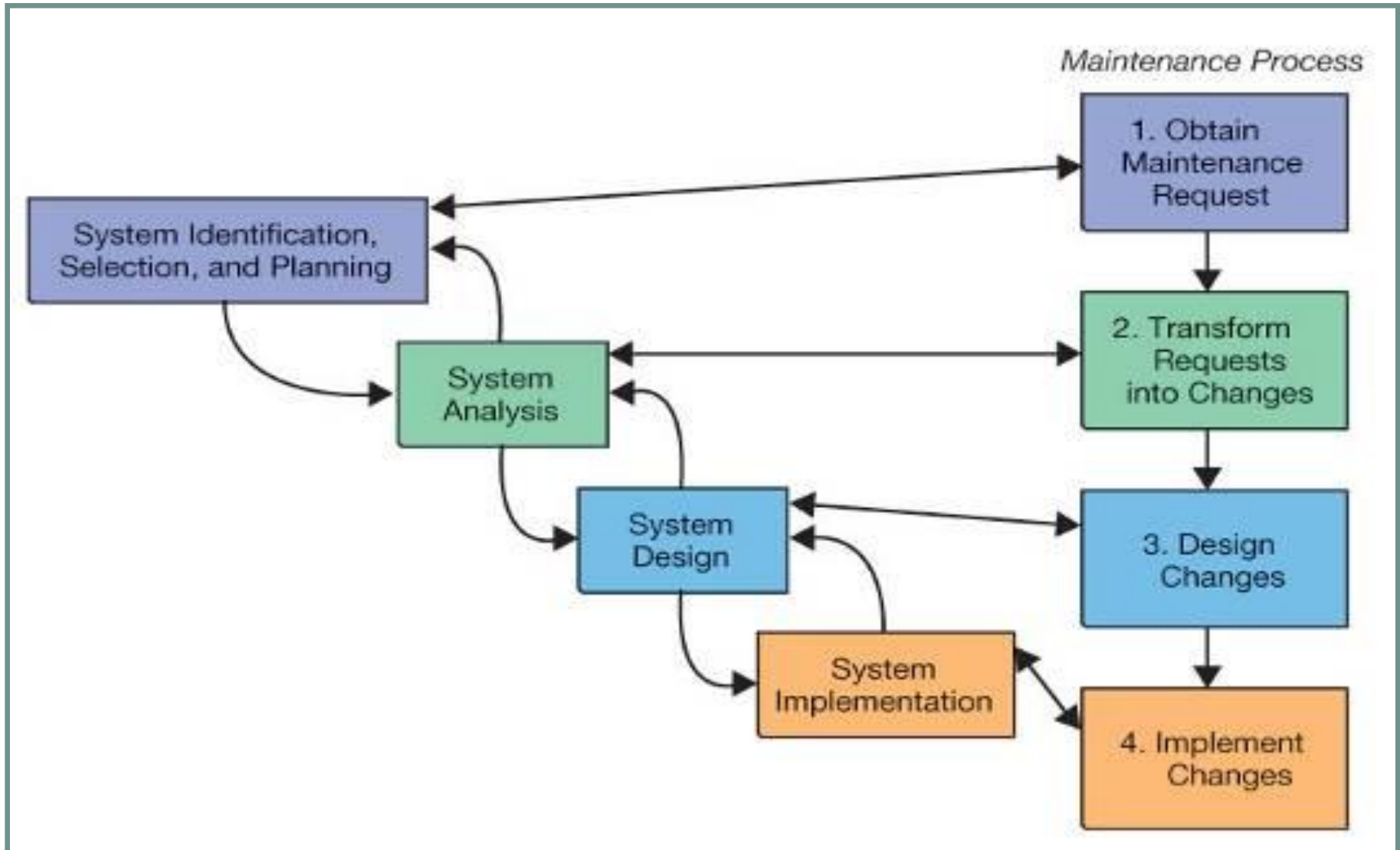
Training Option	Description
Tutorial	One person taught at one time by a human or by paper-based exercises
Course	Several people taught at one time
Computer-aided instruction	One person taught at one time by the computer system
Interactive training manuals	Combination of tutorials and computer-aided instruction
Resident expert	Expert on call to assist users as needed
Software help components	Built-in system components designed to train users and troubleshoot problems
External sources	Vendors and training providers to provide tutorials, courses, and other training activities

---

# System Conversion and Installation

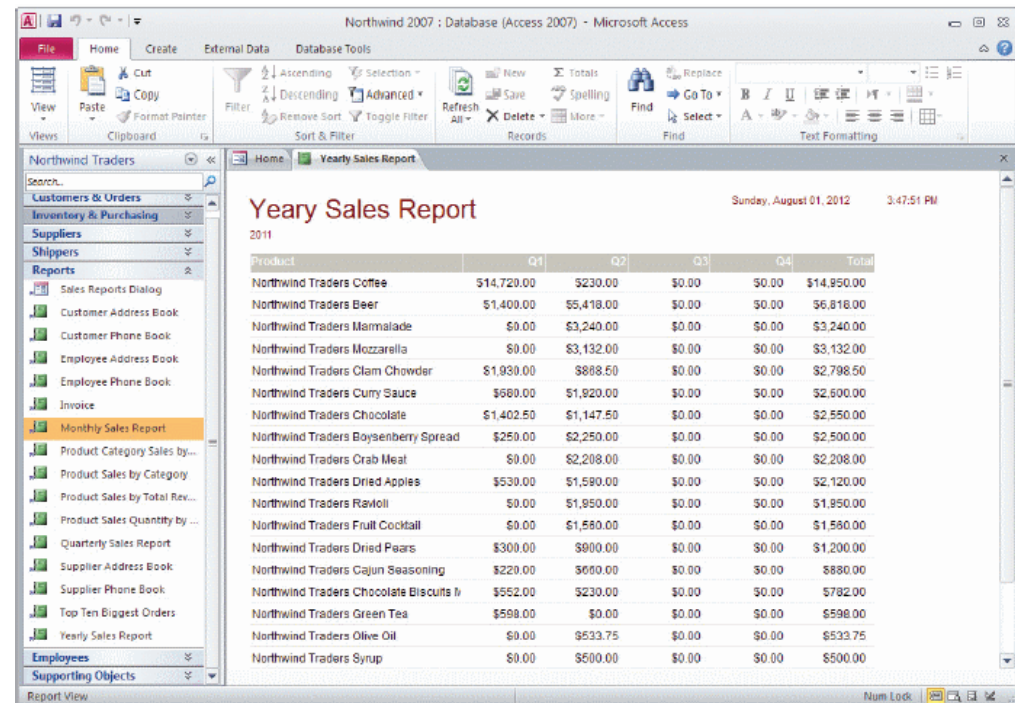


# System Maintenance



# End-User Development

- End-user development is a commonly used practice by tech-savvy managers who want to enhance their decision making and business intelligence.
- Using tools such as Microsoft Access, a sales manager can develop an application to track sales.



Northwind 2007 : Database (Access 2007) - Microsoft Access

File Home Create External Data Database Tools

Views Customers & Orders Inventory & Purchasing Suppliers Shippers Reports Sales Reports Dialog Customer Address Book Customer Phone Book Employee Address Book Employee Phone Book Invoice Monthly Sales Report Product Category Sales by... Product Sales by Category Product Sales by Total Rev... Product Sales Quantity by... Quarterly Sales Report Supplier Address Book Supplier Phone Book Top Ten Biggest Orders Yearly Sales Report Employees Supporting Objects

Yearly Sales Report Sunday, August 01, 2012 3:47:51 PM

Product	Q1	Q2	Q3	Q4	Total
Northwind Traders Coffee	\$14,720.00	\$230.00	\$0.00	\$0.00	\$14,950.00
Northwind Traders Beer	\$1,400.00	\$5,418.00	\$0.00	\$0.00	\$6,818.00
Northwind Traders Marmalade	\$0.00	\$3,240.00	\$0.00	\$0.00	\$3,240.00
Northwind Traders Mozzarella	\$0.00	\$3,132.00	\$0.00	\$0.00	\$3,132.00
Northwind Traders Clam Chowder	\$1,930.00	\$888.50	\$0.00	\$0.00	\$2,798.50
Northwind Traders Curry Sauce	\$680.00	\$1,920.00	\$0.00	\$0.00	\$2,600.00
Northwind Traders Chocolate	\$1,402.50	\$1,147.50	\$0.00	\$0.00	\$2,550.00
Northwind Traders Boysenberry Spread	\$250.00	\$2,250.00	\$0.00	\$0.00	\$2,500.00
Northwind Traders Crab Meat	\$0.00	\$2,208.00	\$0.00	\$0.00	\$2,208.00
Northwind Traders Dried Apples	\$530.00	\$1,590.00	\$0.00	\$0.00	\$2,120.00
Northwind Traders Revoli	\$0.00	\$1,950.00	\$0.00	\$0.00	\$1,950.00
Northwind Traders Fruit Cocktail	\$0.00	\$1,580.00	\$0.00	\$0.00	\$1,580.00
Northwind Traders Dried Pears	\$300.00	\$800.00	\$0.00	\$0.00	\$1,200.00
Northwind Traders Cajun Seasoning	\$220.00	\$600.00	\$0.00	\$0.00	\$880.00
Northwind Traders Chocolate Biscuits 1/2	\$552.00	\$230.00	\$0.00	\$0.00	\$782.00
Northwind Traders Green Tea	\$598.00	\$0.00	\$0.00	\$0.00	\$598.00
Northwind Traders Olive Oil	\$0.00	\$533.75	\$0.00	\$0.00	\$533.75
Northwind Traders Syrup	\$0.00	\$600.00	\$0.00	\$0.00	\$600.00

# Acquiring Information Systems



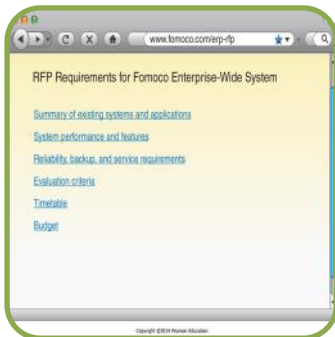
## Making the Business Case

Describe how to formulate and present the business case for technology investments.



## The Systems Development Process

Describe the systems development life cycle and its various phases.



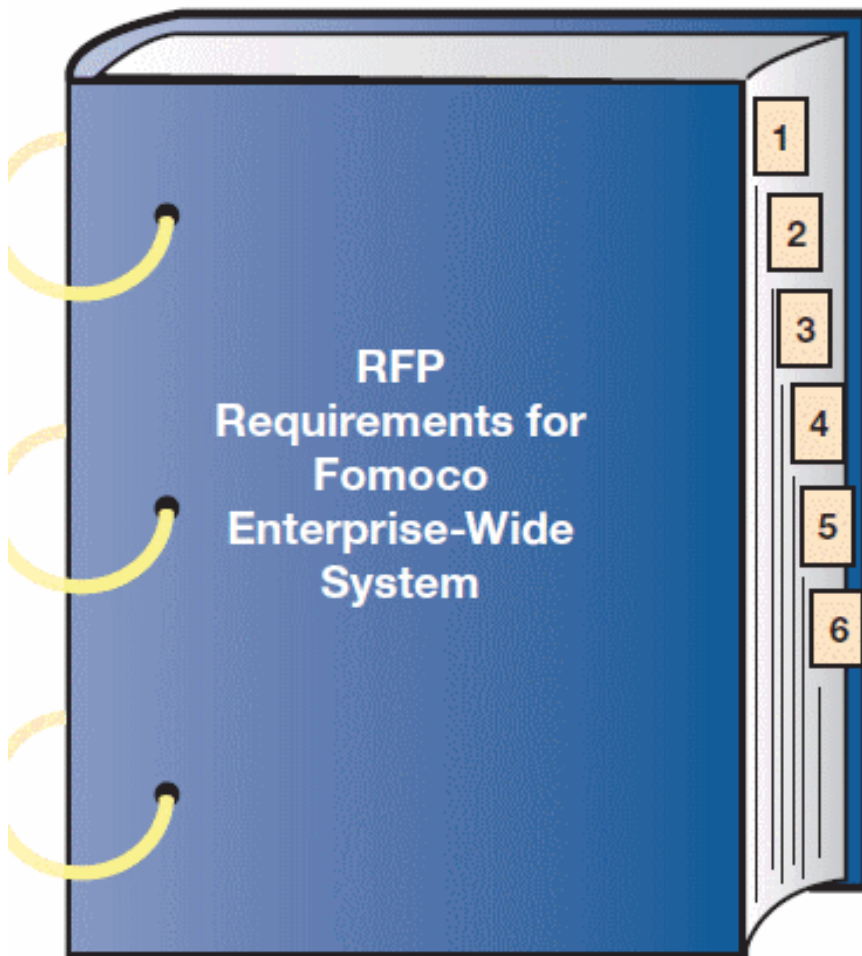
## Acquiring Information Systems

Explain how organizations acquire systems via external acquisition and outsourcing.

# Steps in External Acquisition

- Competitive bid process—find the best system for lowest possible price.
  1. Systems planning and selection
  2. Systems analysis
  3. Development of a request for proposal
  4. Proposal evaluation
  5. Vendor selection
- The first two steps are similar to SDLC.

# Development of a Request for Proposal (RFP)



Areas  
covered in  
an RFP

1. Summary of existing systems and applications
2. System performance and features
3. Reliability, backup, and service requirements
4. Evaluation criteria
5. Timetable
6. Budget



# Proposal Evaluation

- Proposal evaluation—An assessment of proposals received from vendors.
  - May include system demonstrations
  - System benchmarking
    - Standardized tests to compare different proposed systems
    - Common system benchmarks
      - Response time given a specified number of users
      - Time to sort records
      - Time to retrieve a set of records
      - Time to produce a given record
      - Time to read in a set of data

# Vendor Selection

- Usually more than one system will meet the criteria.
- Determine the best fit
- Need to prioritize/rank the proposed systems
  - Best ranking system is chosen.
  - Formal approach—devise a scoring system for the criteria
  - Less formal approaches:
    - Checklists
    - Subjective processes

# Multicriteria Analysis Example

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

Criteria	Weight	Alternative A		Alternative B		Alternative C	
		Rating	Score	Rating	Score	Rating	Score
<u>Requirements</u>							
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
	<u>50</u>		<u>122</u>		<u>250</u>		<u>250</u>
<u>Constraints</u>							
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
	<u>50</u>		<u>220</u>		<u>165</u>		<u>180</u>
Total	100		342		415		430

# Application Service Providers (ASP)

- Problems
  - Managing the software infrastructure is a complex task.
  - High operating costs
  - Scalability issues
- ASPs provide **software as a service (SaaS)**
  - Reduced need to maintain or upgrade software
  - Variable fee based on actual use of services
  - Ability to rely on a provider's expertise

# Outsourcing Systems Development

- Outsourcing systems development—Turning over responsibility for some or all of an organization's IS development and operations to an outside firm.
  - Your IS solutions may be housed in their organization.
  - Your applications may be run on their computers.
  - They may develop systems to run on your existing computers (within your organization).

# Why Outsourcing?

- Cost and quality concerns—higher quality or lower cost systems may be available through outsourcing.
- Problems in IS performance—IS departments might have problems meeting acceptable standards.
- Supplier pressure—aggressive sales force convinces senior management to outsource IS functions.
- Simplifying, downsizing, and reengineering—focusing on core competencies.

## Why Outsourcing? (cont'd)

- Financial factors—liquidation of IT assets.
- Organizational culture—external IS groups are devoid of political ties.
- Internal irritants—external IS group may be better accepted by other organizational users.

# Managing the IS Outsourcing Relationship

- Ongoing management of an outsourcing alliance is needed.
  1. Strong, active CIO and staff
  2. Clear, realistic performance measurements of the system
  3. Multiple levels of interface between customer and outsourcer
- Full-time relationship managers should be assigned.



# Not All Outsourcing Relationships Are the Same

- Outsourcing relationships
  - No longer just a legal contract
  - Strategic, mutually beneficial partnership
  - Different types of outsourcing relationships
    - Basic relationship—“Cash & Carry”
    - Preferred relationship—Set preferential pricing
    - Strategic relationship—Share risks/rewards