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COMP6115

Object Oriented Analysis and Design

Session #13

Installation and Operations

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Learning Outcomes

LO1: Identify the basic concept of advance topic in Object Oriented Analysis and Design

LO2 : Use the knowledge to develop documentation for object oriented software analysis and design using Unified Modelling Language

LO3 : Analyze any problem in any software application and find out the alternative solutions using object oriented analysis and design approach

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Chapter 13:

Installation and Operations

Objectives

- Be familiar with the system installation process.
- Understand different types of conversion strategies and when to use them.
- Understand several techniques for managing change.
- Be familiar with post-installation processes.

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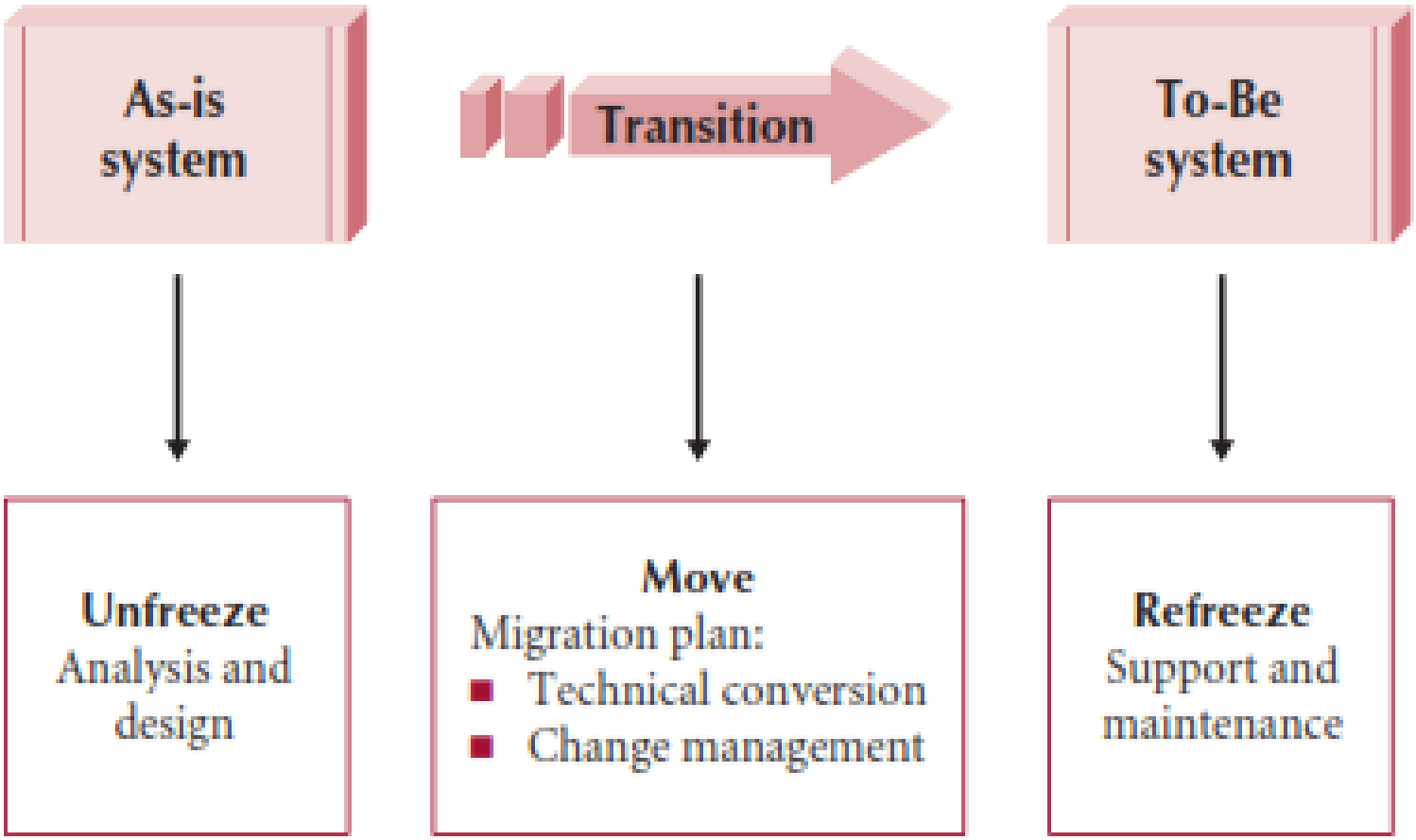
Introduction

- Managing the change to a new system is one of the most difficult tasks in any organization
- Conversion planning normally begins while the programmers are still coding
- Change management focuses on people
- Maintenance can account for 60-80% of IS budget

A Model for Implementing Change



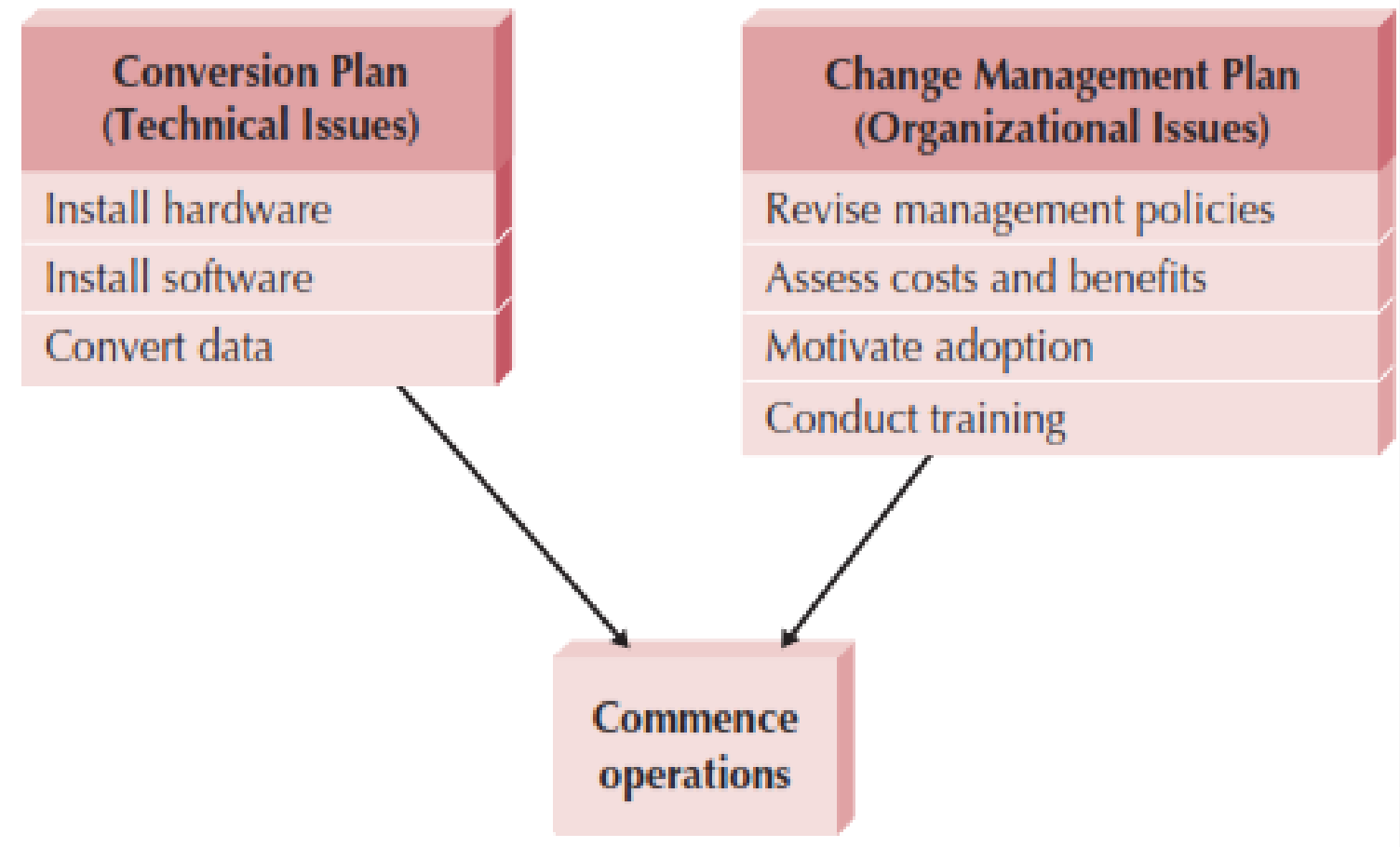
Cultural Issues and Information Technology

- Factors that may affect adoption/acceptance of technology
  - Speed of messages—may affect documentation & training
  - Context: high context societies need to see how the new system fits in to existing systems
  - Time: poly-chronic vs. mono-chronic (similar to parallel vs. serial)
  - Power distance—can a subordinate point out errors?
  - Uncertainty avoidance—related to risk and stress caused by change
  - Individualism vs. collectivism—who is more important: the individual or the group?
  - Masculinity vs. femininity
  - Long- vs. short-term orientation—which is the focus: long term relationships or short term profits?

Conversion

- Conversion is the technical process by which a new system replaces an old system
- Three major steps to a conversion plan
  - Buy & install hardware
  - Install software
  - Convert data
- Conversion dimensions
  - Conversion style—direct or parallel
  - Conversion location—pilot, phased or simultaneous
  - Conversion modules—whole system at once or one module at a time

Elements of Migration Plan



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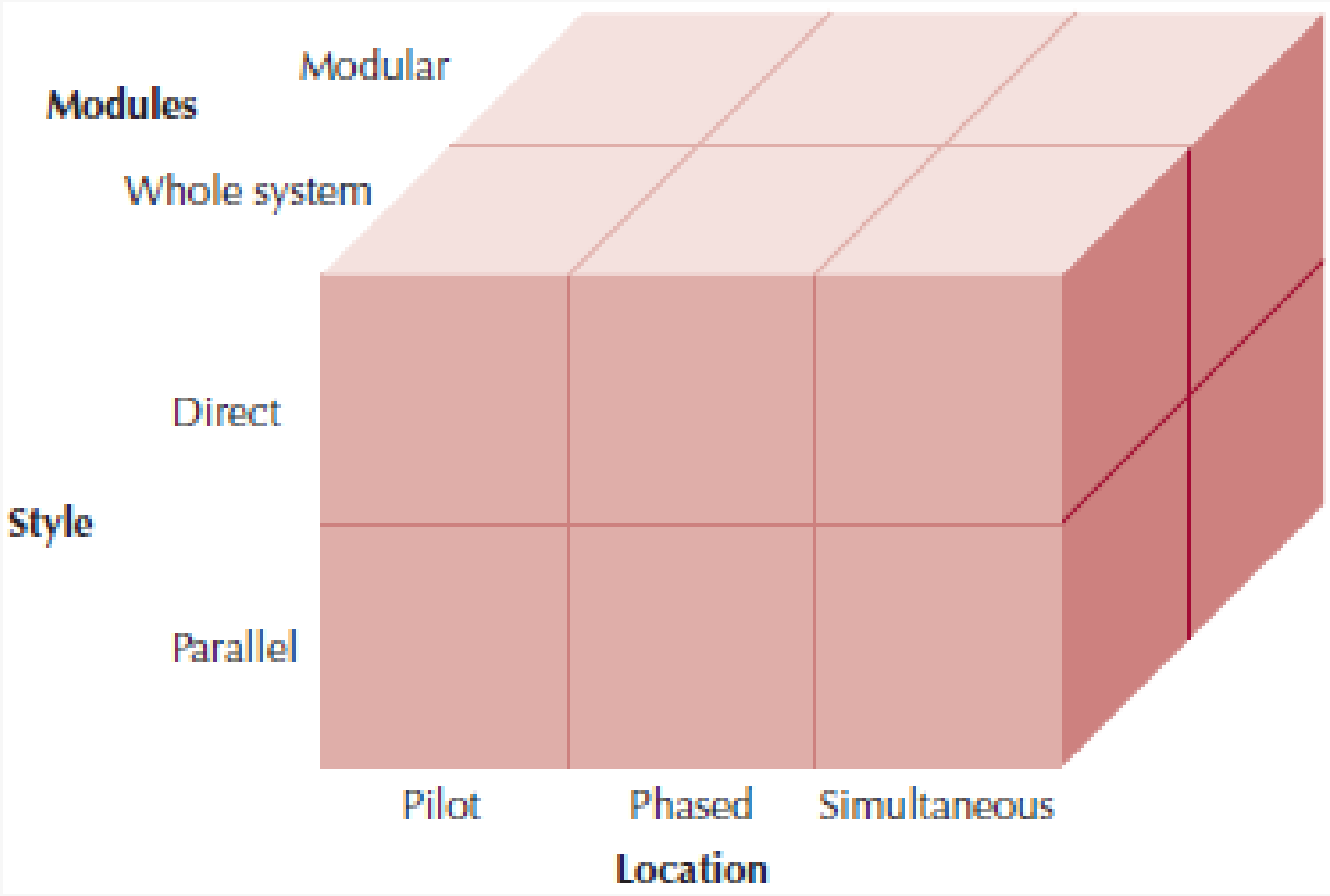
Conversion Strategies



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Selecting Conversion Strategies

- Combine dimensions to form a strategy as needed
  - Example: Begin with a pilot conversion using parallel conversion in a handful of locations; once successful, roll out to remaining locations using phased conversion
- Prioritize risk, cost, and time; then refer to chart

	Conversion Style		Conversion Location			Conversion Modules	
Characteristic	Direct Conversion	Parallel Conversion	Pilot Conversion	Phased Conversion	Simultaneous Conversion	Whole-System Conversion	Modular Conversion
Risk	High	Low	Low	Medium	High	High	Medium
Cost	Low	High	Medium	Medium	High	Medium	High
Time	Short	Long	Medium	Long	Short	Short	Long

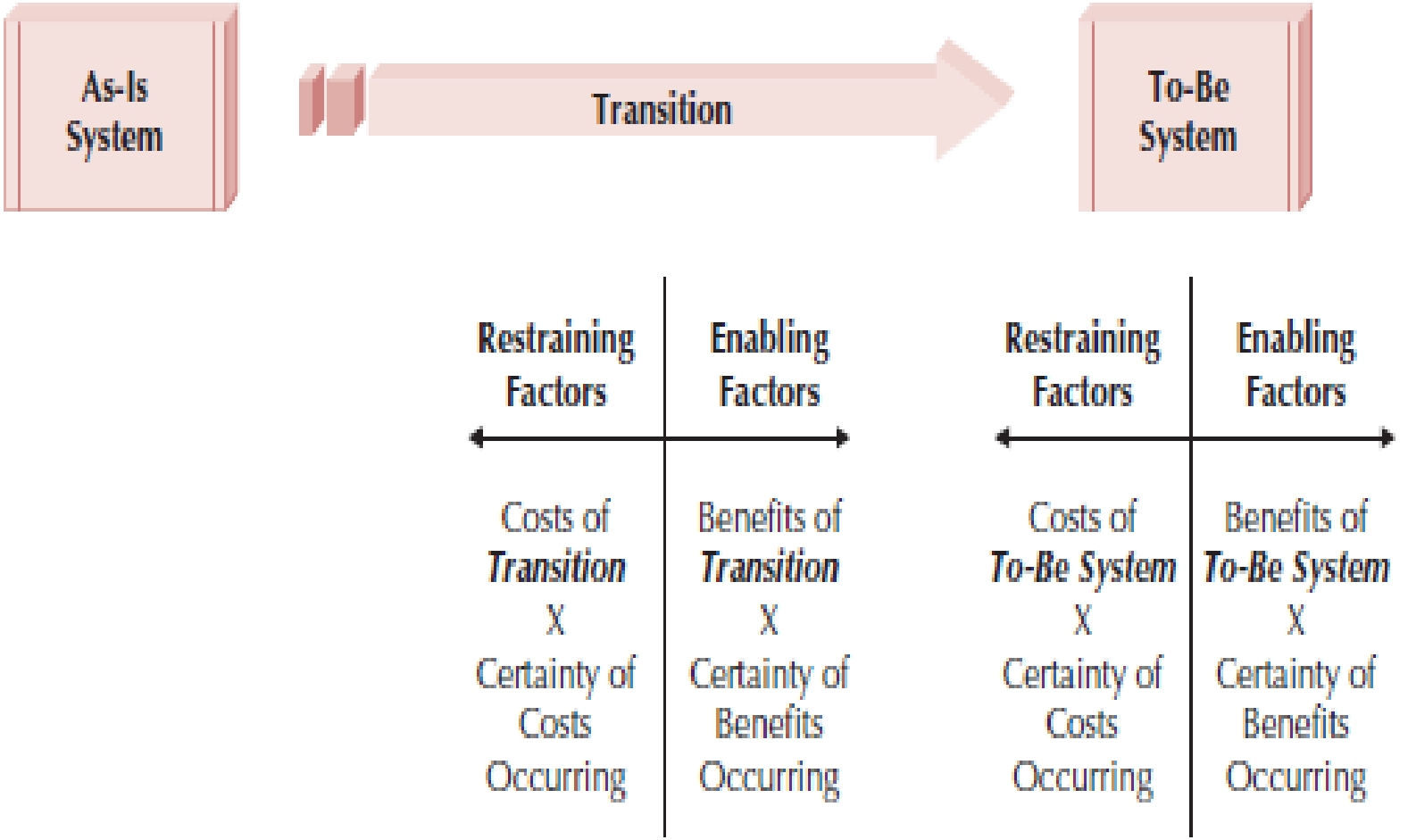
Change Management

- The process of helping people adopt & adapt to the to-be system and its accompanying work processes without undue stress
- Key roles
  - Sponsor
  - Change agent
  - Potential adopters
- “Build it and they will come” doesn’t work!

Resistance to Change

- What is good for the organization is often not good for the people in it
- People perform their own personal cost-benefit analysis
  - Perceived costs & benefits are weighted by the amount of uncertainty associated with them
  - Most will overestimate costs and underestimate benefits
  - Must take into account the transition process cost
  - Perceived costs and benefits are more important than real costs and benefits

Costs & Benefits of Change



Revising Management Policies

- Management policies
  - Provide goals
  - Define how work processes should be performed
  - Determine how people are rewarded
- No computer system will be successfully adopted unless management policies support its adoption

Work Process Structuring Tools

- Standard Operating Procedures
  - SOPs must be revised to match the to-be system
- Measurements and Rewards
  - Design to motivate desired (acceptance) behavior
- Resource Allocation
  - Direct effect is the actual reallocation of resources
  - Symbolic effect shows that management is serious about the new system

Assessing Costs & Benefits

- Develop a list of costs & benefits from two perspectives: the organization & the potential adopters
- Consider the effects on both end-users and managers
- Goal is to persuade those who might resist to support the change
  - Significant management changes may be required to prevent grassroots derailing efforts
- A successful organization may find it harder to manage change
  - People need to be convinced that was has worked in the past may not work in the future

Motivating Adoption

- Provide clear and convincing evidence of the need for change
- Two basic strategies to motivate adoption
  - Informational strategy
  - Political strategy
- Change management goal is to support and encourage the ready adopters and help them win over the reluctant adopters

Enabling Adoption: Training

- Provide the skills needed to adopt the change
  - Don’t assume the system is so simple to learn that new users need no training
- What to train?
  - Training should ***not*** focus on using the system
  - Training should focus on helping the users accomplish their jobs
  - Training should focus on what the user needs to do, not what the system is capable of doing
- How to train?
  - In groups in a classroom
  - One on one
  - Computer based training (CBT)

Selecting Training Methods

	One-on-One Training	Classroom Training	Computer-Based Training
Cost to develop	Low to Medium	Medium	High
Cost to deliver	High	Medium	Low
Impact	High	Medium to High	Low to Medium
Reach	Low	Medium	High

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Post-implementation Activities

- Goal is to institutionalize the new system
  - Make it the normal & accepted routine
  - "Refreeze" the organization after successful transition
- Usually the job of the project sponsor and manager
  - Actively promote its use and monitor its adoption
  - Provide steady flow of information to users to encourage use

System Support

- Now transition from project team to an operations group
  - Responsible for operating the system & providing system support
- Types of system support
  - On-demand training
  - Online support (e.g., documentation & FAQs)
  - Help desk to provide expert advice
    - Level I support should satisfy 80% of problems
    - Unable to solve at level I:
      - Generate problem report or ticket
      - Escalate to Level II

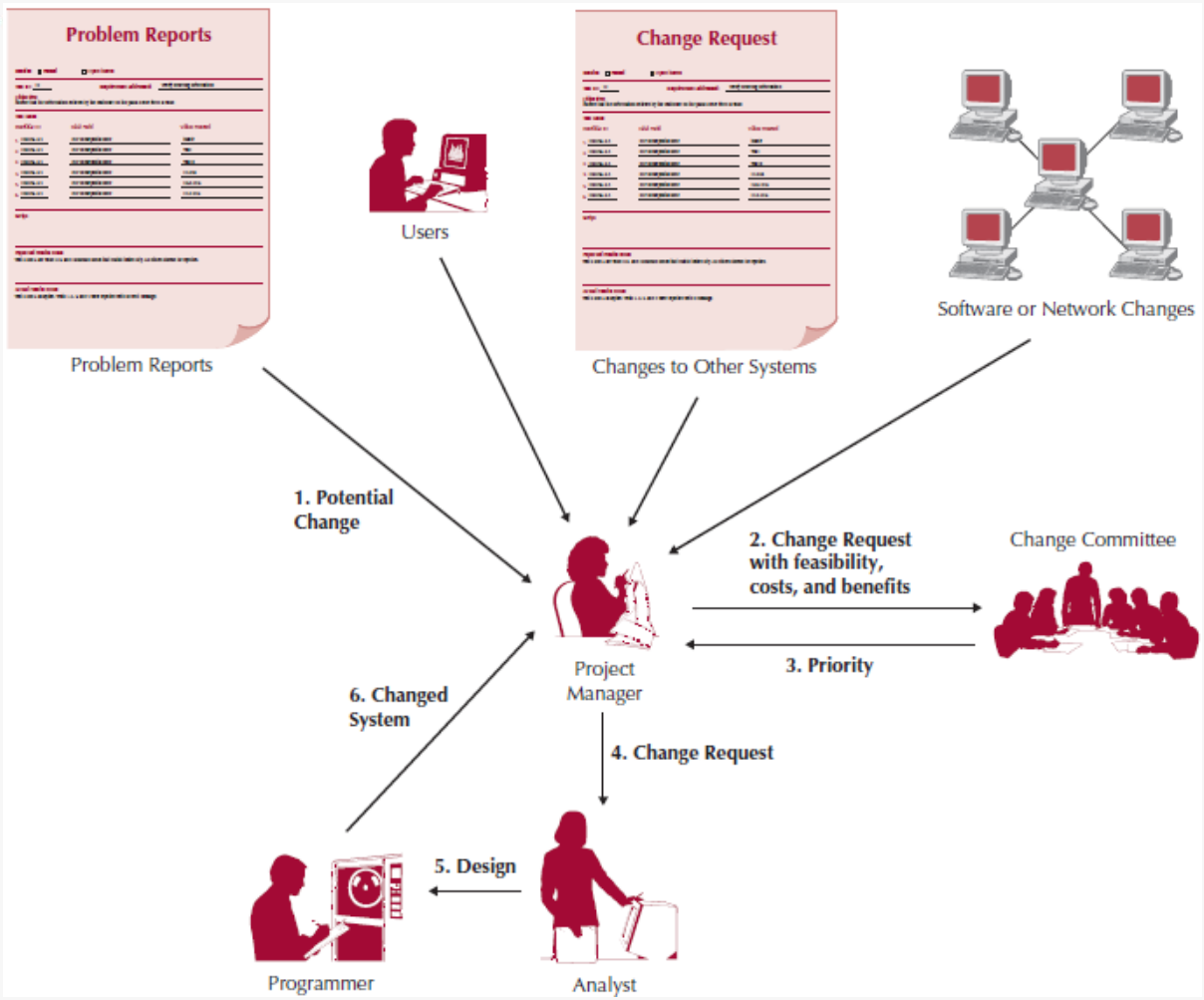
Elements of a Problem Report

- Time and date of the report
- Name, e-mail address, and telephone number of the support person taking the report
- Name, e-mail address, and telephone number of the person who reported the problem
- Software and/or hardware causing problem
- Location of the problem
- Description of the problem
- Action taken
- Disposition (problem fixed or forwarded to system maintenance)

System Maintenance

- The process of refining the system to make sure it continues to meet business needs
- More expensive than initial development
- Novice system analysts & programmers will work on maintenance projects
- Change requests are smaller versions of a system request
- Requests may come from a number of different sources
  - Problem reports
  - Users
  - Other projects
  - Underlying software (e.g., Operating System changes)
  - Senior management

Processing a Change Request



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Project Assessment

- Determine what was successful and what needs to be improved
  - Project Team Review
    - Members list what worked and mistakes that were made
    - Goal is to repeat excellent performance and eliminate mistakes
    - Project manager can prepare a “lessons learned” document
  - System Review
    - To what extent did the proposed costs & benefits actually accrue
    - Goal is to compare estimates with actual values
      - Determine whether or not the system provides the expected value
      - Provide baseline costs for future projects

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Summary

- Cultural Issues and Information Technology
- Conversion
- Change Management
- Post-implementation Activities

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References

Denis, Wixom,Tegarden. (2015). Systems Analysis and Design: An Object-Oriented Approach with UML. 5th edition. ISBN: 978-1-118-80467-4, John Wiley & Sons, Inc, Denver (USA)