PETER NORTON'S®

Introduction to Computers

- Web integrated activities
- Self-assessments to reinforce main concepts
- Online Resource: www.mhhe.com/peternorton

Technology Education

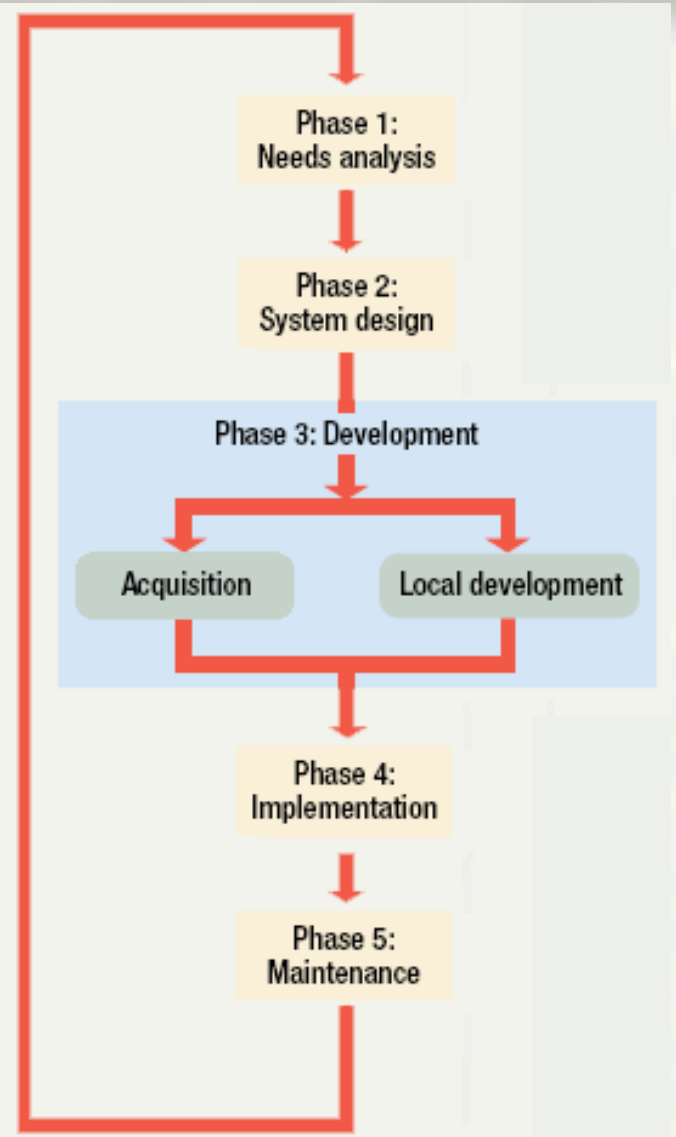
Chapter 12B

Building Information Systems

Systems Development Life Cycle

- Organized way to build information systems
- Consists of five phases
  - Entire usable life of the system

SDLC


Phase 1:
Needs analysis
Phase 2:
System design
Phase 3: Development
Acquisition
Local development
Phase 4:
Implementation
Phase 5:
Maintenance

Systems Development Life Cycle

- Phase 1: needs analysis
  - Users identify a need
  - Solves three main problems
    - Define the problem
    - Present possible solutions
    - Determine the best solution
  - Technology analysts talk with users
  - Define the problem using a description tool
  - A solution is presented to a manager

Systems Development Life Cycle

- Phase 2: Systems design
  - Solution is defined
    - Data storage
    - User interface
    - Reports
  - Several design tools
    - Top down design
    - Bottom up design
  - CASE tools used to build prototypes
    - Computer aided software engineering

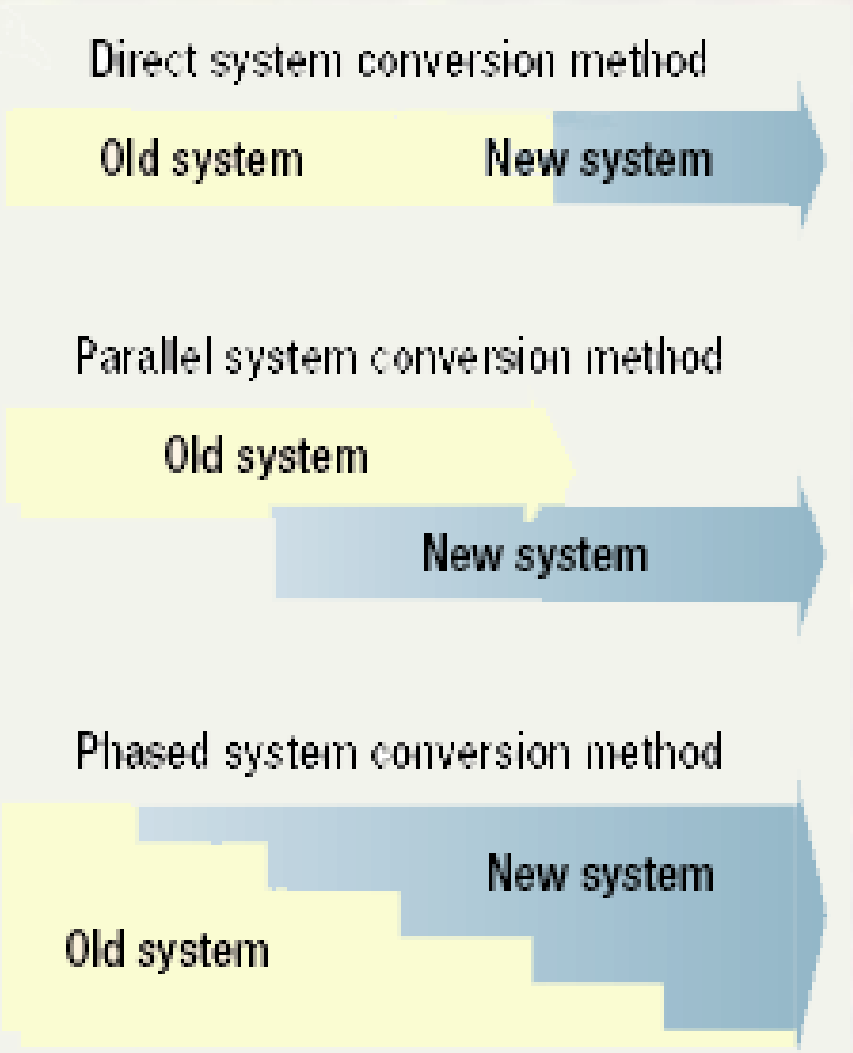
Systems Development Life Cycle

- Phase 3: Development
  - Solution to the problem is built
  - Programmers play a key role
  - Solutions may be purchased
  - Solutions may be built locally
  - Technical writers create instructions
  - Solution is repeatedly tested

Systems Development Life Cycle

- Phase 4: Implementation
  - Installation of hardware and software
  - Users must convert to the solution
    - Direct conversion
    - Parallel conversion
    - Phased conversion
    - Pilot conversion
  - Trainers and support personnel are critical

SDLC Conversion



Systems Development Life Cycle

- Phase 5: Maintenance
  - IT professionals continue to monitor
  - Bugs are fixed
  - New features are added
  - Users often suggest bugs or features

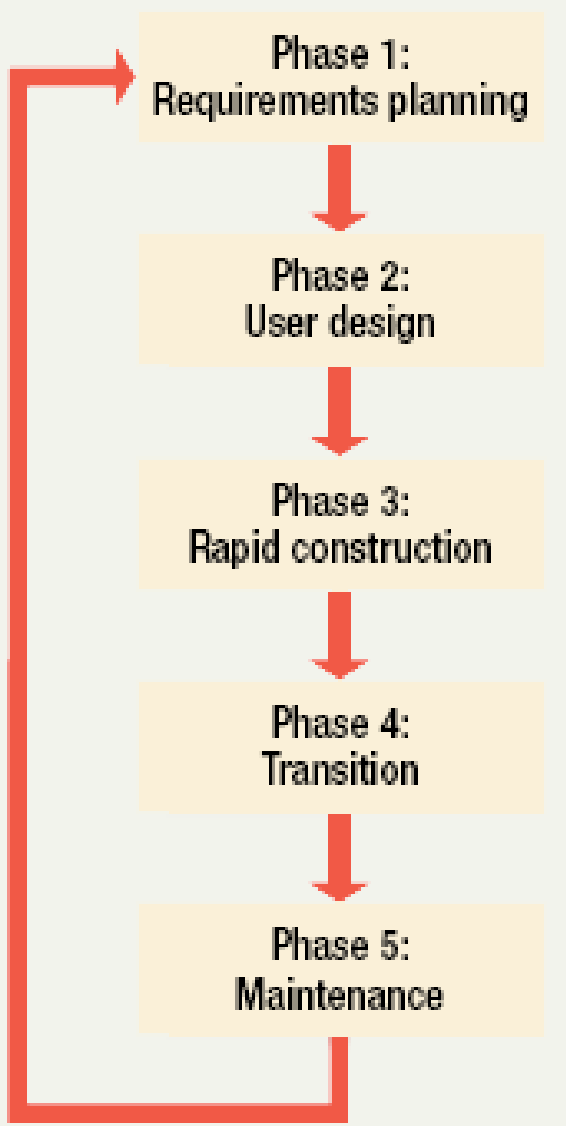
Evolving System Design Methods

- Problems with SDLC
  - SDLC is an old process
  - Very slow process
  - Companies need to respond quickly

Evolving System Design Methods

- Rapid Application Design (RAD)
  - Develops IS systems quickly
  - Several products exist
  - Slightly different development phases

RAD SDLC


Phase 1:
Requirements planning
Phase 2:
User design
Phase 3:
Rapid construction
Phase 4:
Transition
Phase 5:
Maintenance

Evolving System Design Methods

- RAD Phase 1: Requirements planning
  - Requirements for project are defined
  - Joint requirements planning (JRP)
    - Involves programmers and managers
  - Managers from affected departments provide guidance

Evolving System Design Methods

- RAD Phase 2: User design
  - Joint application design (JAD)
    - System analysts and users
  - User provides the details
  - System analyst solve the technical details

Evolving System Design Methods

- RAD Phase 3: Rapid construction
  - IS professionals develop the project
  - A variety of tools can be used
  - Users approve each portion

Evolving System Design Methods

- RAD Phase 4: Transition
  - System is tested on sample data
  - Users are trained on the sample
  - New system runs parallel to existing
  - Phase complete when bugs are gone
  - Old system removed

Evolving System Design Methods

- RAD Phase 5: Maintenance
  - Traditionally not part of RAD
  - All systems need periodic maintenance

Evolving System Design Methods

- Object Oriented Systems Analysis
  - OOSA
  - Project elements are defined using objects
    - Objects are self contained programming constructs
    - Objects have data and functionality
  - Objects are linked together
  - Java and C++ are typical tools

Chapter 12B

End of Chapter