Introduction

- Companies use information as a weapon in the battle to increase productivity, deliver quality products and services, maintain customer loyalty, and make sound decisions.
- Information technology can mean the difference between success and failure

The Impact of Information Technology

- Information Technology (IT)
  - Combination of hardware and software products and services that companies use to manage, access, communicate, and share information
- The Future of IT
  - Will see robust growth for at least a decade
  - The greatest need will be for systems analysts, network administrators, data communications analysts, and software engineers

The Impact of Information Technology

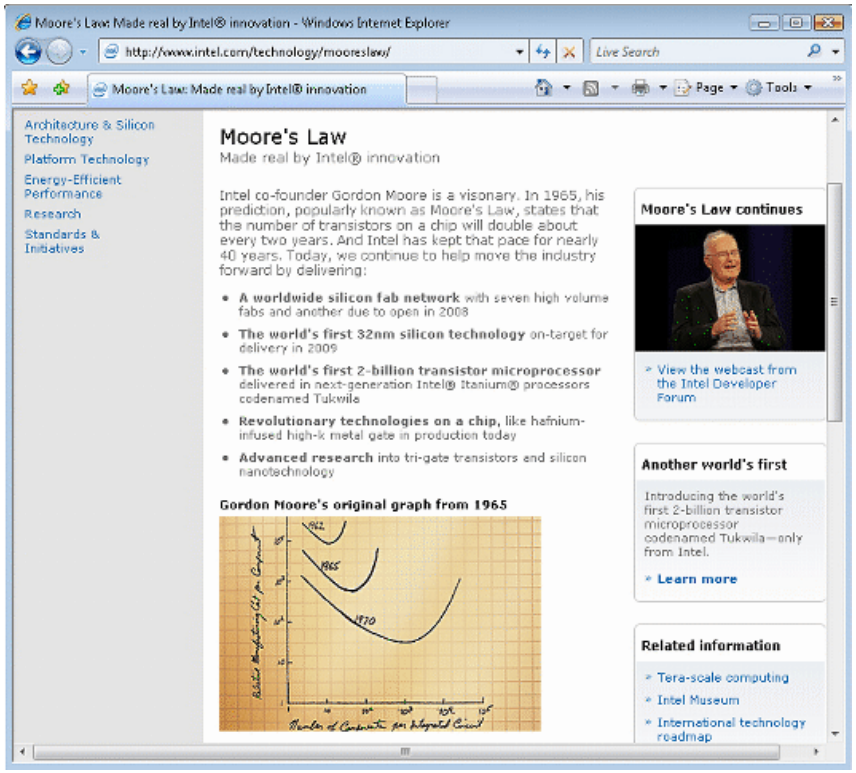
- The Role of Systems Analysis and Design
  - Systems Analysis and Design
    - Step-by-step process for developing high-quality information systems
  - Systems Analyst
    - Plan, develop, and maintain information systems

The Impact of Information Technology

- Who develops Information Systems?
  - In-house applications
  - Software packages
  - Internet-based application services
  - Outsourcing
  - Custom solutions
  - Enterprise-wide software strategies
  - How versus What

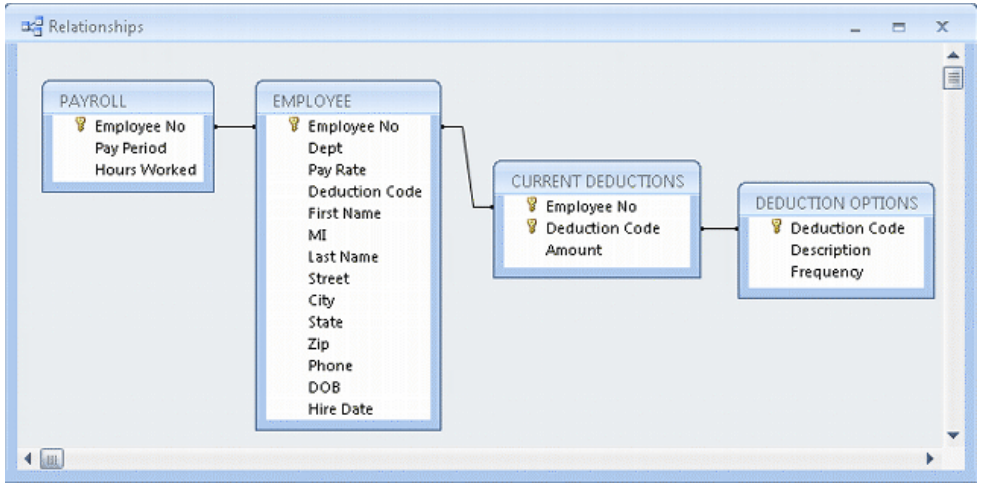
Information System Components

- Hardware
  - Is the physical layer of the information system
  - Moore's Law
- Software
  - System software
  - Application software
  - Enterprise applications

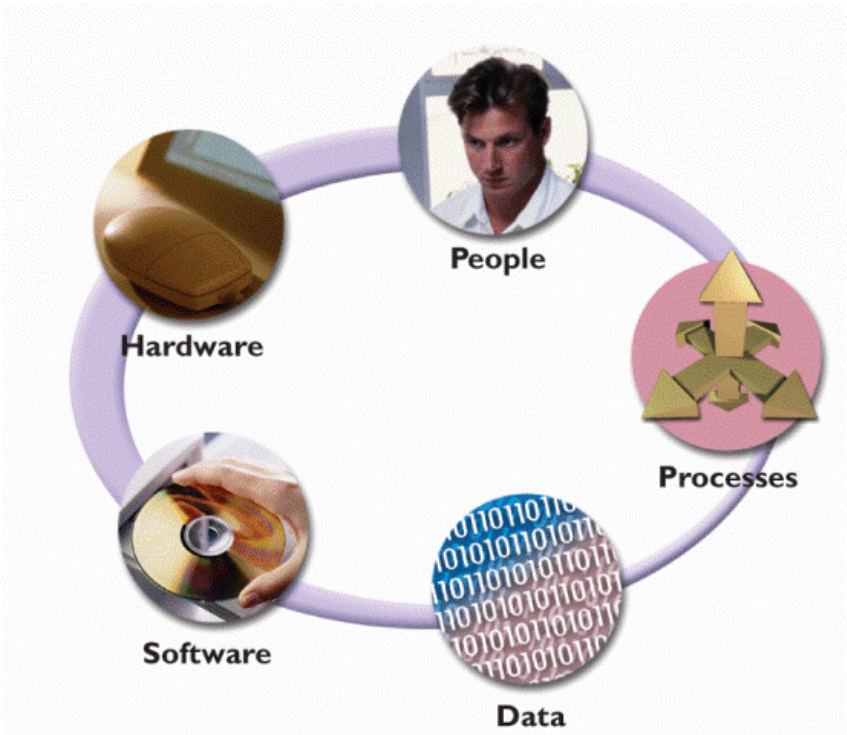


Information System Components

- Software
  - Horizontal system
  - Vertical system
  - Legacy systems
- Data
  - Tables store data
  - By linking the tables, the system can extract specific information



Information System Components



- Processes
  - Describe the tasks and business functions that users, managers, and IT staff members perform to achieve specific results
- People
  - Stakeholders
  - Users, or end users

Understanding The Business

- Business Process Modeling
- Business Profile
- Business Models
  - Business model
  - Business process
  - Business process reengineering (BPR)

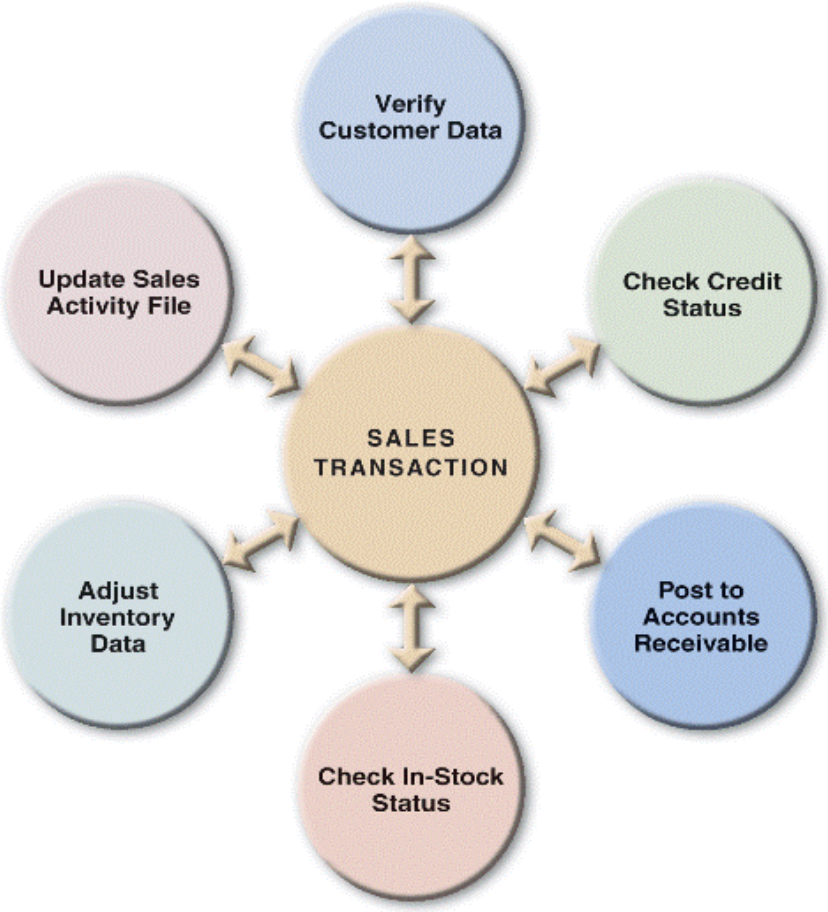
Impact of the Internet AND MOBILE COMPUTING

- E-Commerce or I-Commerce
- B2C (Business-to-Consumer)
- B2B (Business-to-Business)
  - EDI
  - Extensible markup language (XML)
  - Supplier relationship management (SRM)
- Mobile Commerce
- Social Media, data mining/Business Intelligence

How Business Uses Information Systems

- Enterprise computing systems
  - Support company-wide operations and data management requirements
  - Enterprise resource planning (ERP)
  - Many hardware and software vendors target the enterprise computing market

How Business Uses Information Systems



- Transaction processing systems
  - Involve large amounts of data and are mission-critical systems
  - Efficient because they process a set of transaction-related commands as a group rather than individually

How Business Uses Information Systems

- Business support systems
  - Provide job-related information to users at all levels of a company
  - Management information systems (MIS)
  - Radio frequency identification (RFID)
  - What-if

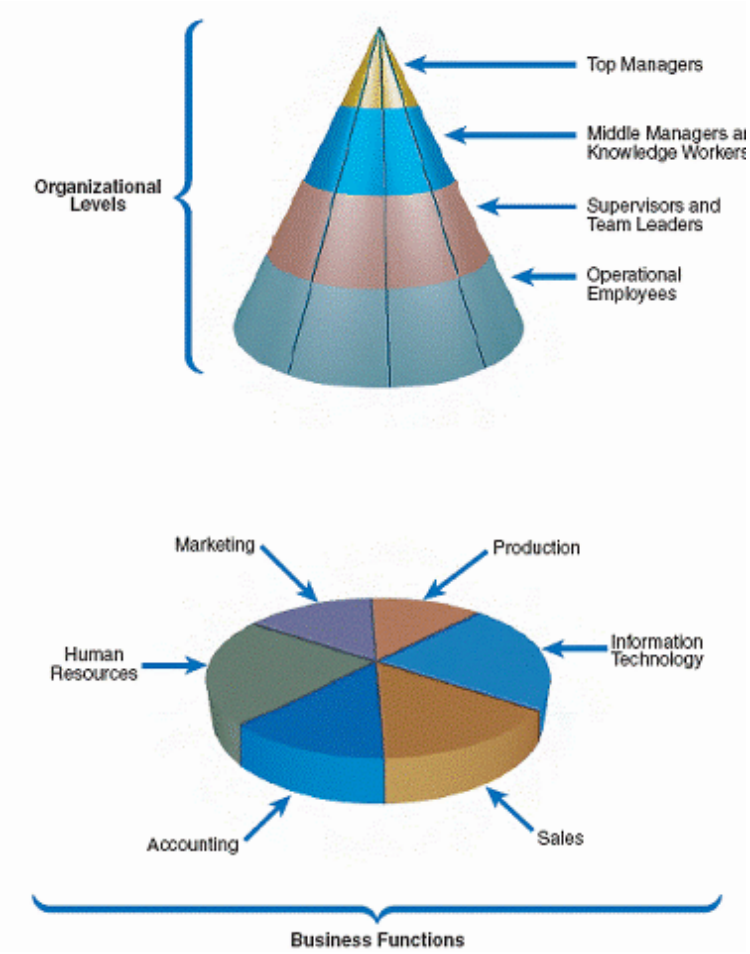
How Business Uses Information Systems

- Knowledge management systems
  - Called expert systems
  - Simulate human reasoning by combining a knowledge base and inference rules
  - Many knowledge management systems use a technique called fuzzy logic

How Business Uses Information Systems

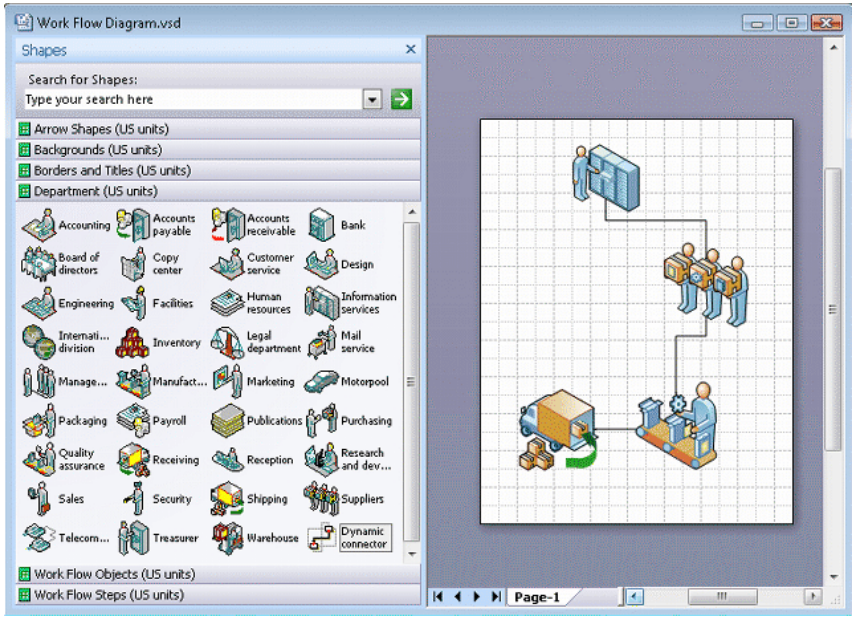
- User productivity systems
  - Technology that improves productivity
  - Groupware
- Information systems integration
  - Most large companies require systems that combine transaction processing, business support, knowledge management, and user productivity features

Information System Users and Their Needs



Systems Development Tools

- Modeling
  - Business model
  - Requirements model
  - Data model
  - Object model
  - Network model
  - Process model



Systems Development Tools

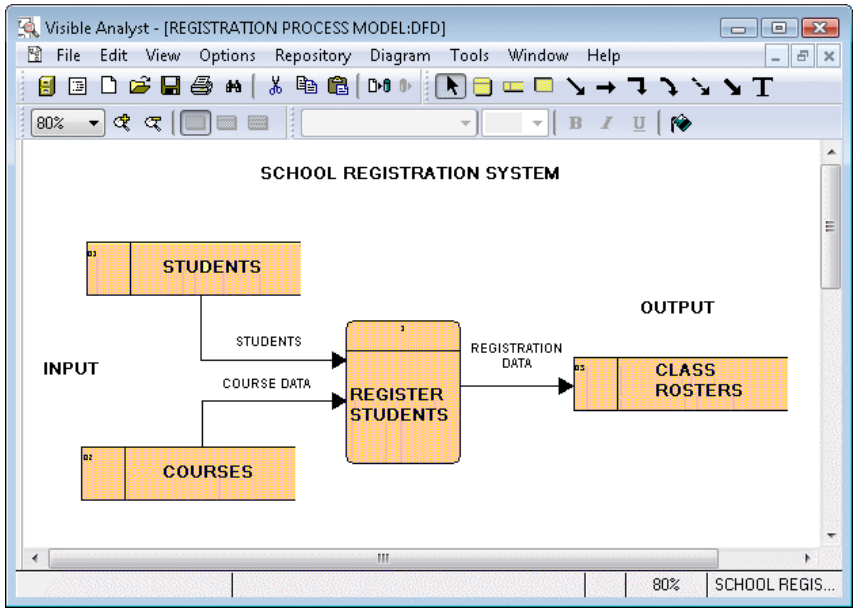
- Prototyping
  - Prototype
  - Speeds up the development process significantly
  - Important decisions might be made too early, before business or IT issues are thoroughly understood
  - Can be an extremely valuable tool

Systems Development Tools

- Computer-Aided Systems Engineering (CASE) Tools
  - Also called computer-aided software engineering
  - CASE tools
  - Can generate program code, which speeds the implementation process

Overview of Systems Development Methods

- Structured Analysis
  - Systems development life cycle (SDLC)
  - Predictive approach
  - Uses a set of process models to describe a system graphically
  - Process-centered technique
  - Waterfall model



Overview of Systems Development Methods

- Structured Analysis
  - Deliverable or end product
  - Disadvantage in the built-in structure of the SDLC, because the waterfall model does not emphasize interactivity among the phases
  - This criticism can be valid if the SDLC phases are followed too rigidly
  - Adjacent phases usually interact

Overview of Systems Development Methods

- Structured Analysis
  - The SDLC model usually includes five PHASES
    1. Systems planning
    2. Systems analysis
    3. Systems design
    4. Systems implementation
    5. Systems support and security
       - I prefer to call this phase Maintenance and Enhancement
       - Security should be considered through out, instead of an after fact

Upstream vs Downstream Development

users

Planning

Analysis

Design

Upstream, interactive with users constantly, DIFFICULT/EXPENSIVE TO BE OUTSOURCED

Proximity (close to users)
People skills
Domain Knowledge
Management skills

Implementation

Maintenance

Downstream, programming and maintenance EASILY TO BE OUTSOURCED

Programming
Technical enhancement
Pick up new technology, a moving target.

Visit: www.elance.com
Search for iPhone and .Net developers.

Overview of Systems Development Methods

- Agile Methods
  - Agile process determines the end result
  - Other adaptive variations and related methods exist
  - Two examples are Scrum and Extreme Programming (XP)
  - Analysts should understand the pros and cons of any approach before selecting a development method

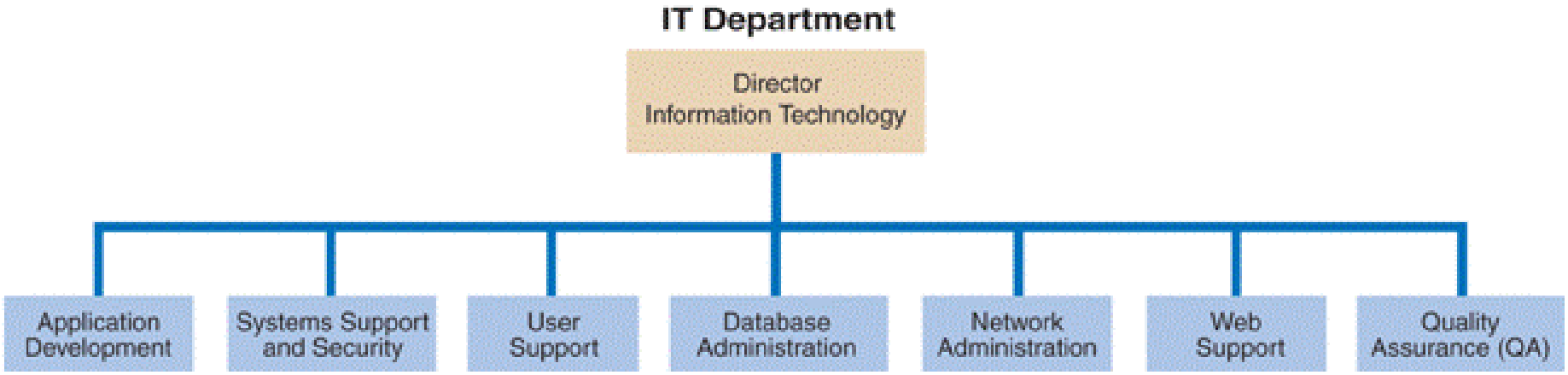
Overview of Systems Development Methods

- Other Development Methods
  - Joint application development (JAD)
  - Rapid application development (RAD)
  - Might encounter other systems development techniques
  - Rational Unified Process (RUP®)
  - Microsoft Solutions Framework (MSF)

Systems Development Guidelines

- Develop a project plan
- Involve users and listen carefully to them
- Use project management tools to identify tasks and milestones
- Develop accurate cost and benefit information
- Remain flexible

Information Technology Department



The Systems Analyst Position

- Responsibilities
  - Translate business requirements into IT projects
- Required Skills and Background
  - Solid technical knowledge, strong oral and written communication skills and analytic ability, and an understanding of business operations and processes
- Certification
  - Important credential

Visit: www.monster.com and www.dice.com, search for positions such as System Analyst and Business Analyst.