Introduction
Evolution of Commerce

- Civilization’s pre-history - society was focused on hunting and gathering
- As society evolved into an agricultural focus, communities and broader interdependency emerged
- Next manufacturing shifted the commerce focus toward factory produced goods
- As the industrial age has matured control shifts toward knowledge resources
- Producing and trading in knowledge is the core of the emerging information age
Commercializing Information

- Technology offers opportunities which lead to needs which draw forth technology
  - The printing press enabled massive information warehousing and reuse
  - But the technology of paper and books has its own practical limitations (size, weight, space)
  - The technologies accompanying computers opened the door to even more massive information warehousing and reuse
  - But the technology of digital storage has its own practical limitations (currency, accuracy)
  - The interplay of the computer and communications make even more massive information reuse possible independent of warehousing
Computers as Business Appliances

- The evolution of computer technology has expanded the opportunities for their cost effective application in virtually all commerce

- 1950’s: computers for the largest companies
- 1960’s: computers for research and higher ed.
- 1970’s: computer for individual workers or jobs
- 1980’s: microcomputers for any business with access to software development
- 1990’s: computers for anyone “who can chew gum”
- 2000’s: networking begins to erase the “distance”
- 2010’s: mobile computing allows business anywhere & moving
- 2020’s: machine-learning, data analytics, autonomous technology
Computing Changes Business

- Ready access to timely management information allows business to streamline their operating costs allowing narrower profit margins and increased competition
  - Supply chain management
  - “Just in time” inventory and control
  - Personalized transactions with customer database
  - Market forecasting and trend analysis at all points in the supply chain
- Networking and mobile computing replaces the marketing truism, “Location, location, location?!”
  - Information resources stored at “headquarters” can be accessed and maintained from anywhere “on the go!”
Effective use of business information depends on information discipline

- accuracy
- consistency
- completeness
- accessibility
- currency
- understandability

Information Systems Analysis

- builds an accurate, efficient and effective model of the business environment
- assesses the opportunities and tradeoffs of applying information technology to that
- designs the integration of IT into the environment
What makes a “good” system?

* The system satisfies constraints (“must haves”)
  * Supports my business practice
  * Sufficiently reliable
  * Sufficiently efficient
  * Usable by the people who need to use it
  * Compatible with other systems I must use

* The system has cost/effective features: (“should haves”)
  * Reliability
  * Speedy
  * Flexibly adapts to my changing needs
  * Ease of use
  * Impressive
  * Compatible with other systems I would like to use
Information Systems are like Shoes

* I can’t use my shoes if: (“must haves”)
  * they don’t fit my feet
  * they are unreliable
  * they keep falling off

* I like my shoes because: (“should haves”)
  * they’re attractive
  * their style is admired by my peers
  * they have a famous brand name
  * they were very expensive
  * they were very inexpensive
  * they will last a very long time
  * they are disposable
One size shoe doesn’t fit all!

* Large information systems reflect the complexity of the organizations that they serve
  * complex communication paths
  * multiple levels of decision makers
  * large numbers of technologies at work together
  * many simultaneous users of sub-systems
  * very large investment in information technology

* Small information systems reflect small enterprises
  * limited investment potential in information
  * simpler management decision requirements
  * fewer users of the systems
  * limited technical expertise in house
Are there large and small analysts?

* Shoes are shoes!:
  * at their core information systems are almost identical
  * data storage, user interfaces, computer software, networking resources
  * all analysts need to understand system and technology principles

* Special shoes may require special techniques!:
  * large systems pose additional problems because of their complexity
  * massive redundant storage systems, computer software research and developers, systems integration across large networks and brand names, lead time for rolling out expensive system changes

* The difference: the relative importance of the skills used!