Chapter 1: Information Systems

Everything changes

• 1903: Orville and Wilbur Wright invent the first airplane.
• 1914: St. Petersburg-Tampa Airboat Line became the world’s first scheduled passenger airline service.
• 2014: The commercial airline industry generates more than $200 billion in revenue each year.

WHATS WILL HAPPEN WITH DNA NEXT?
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Everything changes

• 1969: Armstrong & Aldrin walk on the moon.
• 2004: First private space plane SpaceShipOne goes to space.
• 2012: Unmanned SpaceX Dragon supplies the ISS.
• 2014: NASA signs $6.8 billion contract with Boeing and SpaceX to launch astronauts into space again.
• 20XX: Space Elevator goes online and first passengers visit space.

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Everything changes

• 2005: Google re-releases Google Earth.
• 20XX: Google releases Google Live.

What are some issues that Google could face if they implemented live feeds?
Do we have privacy anymore?
What are some ways this technology could be used?
What other technology do you see evolving over the next 20 years?

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Everything changes

• 1998: First portable digital audio player released.
• 1999: MP3 players cost $450 and hold 10 songs.
• 2000: Samsung Uproar is first cell phone with MP3 capabilities.
• 2001: Apple releases first generation iPod.
• 2007: Apple releases first generation iPhone (with MP3 capabilities).
• 2014: Smartphones can hold thousands of MP3s and stream music over the cellular or Wi-Fi connections.
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Everything changes

• 1975: The Altair 8800 release (First Personal Computer)
  • Had only 256 bytes of memory
  • No keyboard or monitor
  • Switches entered data (0's and 1's – Off and On – Binary)
  • Indicator lights displayed result of program

• 1976: Apple I released
  • Steve Jobs and Steve Wozniak form Apple Computer
  • Jobs worked in an apple orchard and apples are the perfect fruit.

• 1977: Apple II released
  • Color monitor
  • 4KB of RAM
  • Operating system stored on ROM
  • Optional floppy disk to load programs and games (like Pong)

• 1981: The Osborne
  • First “portable” computer
  • Weighed 24.5 lbs. with a 5 in. screen
  • Preinstalled with spreadsheet and word processing software.
  • Design bought by Compaq in 1983
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Everything changes

- 1981: IBM PC 5150
  - Business and consumer machine
  - Hard disk support not found in early models
  - Most companies had IBM mainframes, so they adopted IBM PCs

- 2014: Computers everywhere...
  - Desktops
  - Laptops
  - Tablets
  - Cell phones
  - Etc.

Why is it important to understand that technology changes?

- 1965: Moore's Law was created by Gordon Moore, cofounder of Intel.
  - Moore's Law states that computer processing power will double every eighteen months or so (includes Internet size). Imagine a car maker manufacturing a vehicle that doubles its gas mileage every eighteen months.
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So why is Moore's Law important to business computing?

If you were in charge of purchasing 1,250 smartphones, which smartphone platform would you buy? Apple? Android? Blackberry? Windows?

For this example, if you choose Apple or Android you choose incorrectly and your competitors now have the competitive advantage. Remember: When you get something wrong, your competitor likely got it right.
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So why is Moore's Law important to business computing?
- An organization can be a LEADER or a FOLLOWER in technology based decisions. This is based on the organization's risk tolerance and whether there is a potential to gain competitive advantage.
- Leaders buy the newest technology and maybe get a competitive advantage.
- Followers wait to see what works and lose the competitive advantage.

Which is better? A leader or a follower?

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So what is Business Information Technology?
- Business information technology is the STUDY, DESIGN, IMPLEMENTATION, SUPPORT, and MANAGEMENT of a computer-based information system, particularly SOFTWARE and HARDWARE.

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What are some important aspects in Business Information Systems?
- People
  - Computers are dumb! They can't do anything without input from a user at some point in time.
  - Users need to operate programs.
  - Users need to develop programs, but then they can be set to automatically run.
What are some important aspects in Business Information Systems?

**Competency**
- Gaining computer competency in business is paramount to success.
- If users don’t have computer competency, they will struggle.
- In this class, gaining competency in Excel and Access will allow you to take advantage of these programs and use them in your future personal and professional lives.

**Attitude**
- Plays a vital role in gaining computer competency.
- Again, computers are not magic, they are dumb. With a little bit of knowledge, you can make amazing things happen with a computer.
- You really are limited only by your imagination.
- Don’t be afraid to try something that hasn’t been done before.
- Don’t be afraid to explore new concepts.
- Don’t let the failures (or perceived failures) get you down. Every failure is one step closer to success.

**Critical Thinking**
- Learning computers can seem extremely complicated. However, remember... K.I.S.S. (Keep it simple stupid). Often times end users try to over think things.
- Take a step back, analyze the problem, identify solutions, and then implement the solutions.
- When you have solved a problem, learned what you need to learn, take another step back and see what you could have done better.
- Critically thinking about problems will allow you to always gain an advantage.
What are some important aspects in Business Information Systems?

- **Best Practice**
  - Best practices are a management process, technique, or method that is the most effective way of doing something.
  - Example is PMI’s PMBOK (collection of project management best practices)
  - When implemented, best practices make the business become more efficient, waste less resources, and provide a better product/service.

If you improve your best practice and employees are no longer necessary, what should you do?

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**Business Computing Hardware**

- Tangible and physical aspects of computing hardware.
- Mainframe – HUGE room sized computers
- Midrange – Smaller server type computers
- Microcomputer (what we talk about in class)
  - Laptops
  - Desktops
  - Handheld

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**System Software**

- Among other things, system software makes hardware work. Collection of computer programs that accomplish a specific task.
  - BIOS (Basic input / output system) – Starts the computer. Connects the data between the operating system and hardware.
  - Boot program – Loads the operating system into the random access memory (RAM).
  - Device driver – Controls specific devices that are attached to the computer.
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Operating Systems (Platforms)
- Collection of computer programs that work together to manage hardware and software and makes sure the computer is working correctly.
  - File Management
  - Multitasking
  - Memory Management
  - Disk Management

Some Operating System History
- Bill Gates and Paul Allen used BASIC (Beginners All-Purpose Symbolic Instruction Code) to write the initial program that led to Windows.
- BASIC transformed industry because students could learn it easily.
- IBM approached Gates to write an OS for the IBM PC. Eventually developed MS-DOS.
- Until 1972, users would interact with command line. Xerox designed "Alto" the computer with the first GUI (Graphical User Interface).

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Common Business Operating Systems (Platforms)
- Microsoft Windows
- Mac OS
- Linux (free)
- Unix

Application Software
- Performs particular tasks like creating budgets, resumes, or professional presentations.
- Chances of an application software not meeting an end-user's needs are remote.
- Must be turned on by an end-user.

Common Application Software
- Email (Outlook)
- Word Processor (Word)
- Spreadsheet (Excel)
- Database (Access)
- Presentation Software (PowerPoint)
- Project Management Software (Project)
- Photo / Video Editing Software (Photoshop)

Business Computing Software
- Concerned with four basic applications: spreadsheets, word processors, database, and presentation software.
Productivity Suites
• Collection of business computer application programs of associated functionality that share a common graphical user interface.
• Also called “Software Suites” or “Application Suites”
• Allows smooth data exchange
• Microsoft Office is the most popular.

What is the most important aspect of learning application software?
• Attitude

Sharing Data Between Software Suites
• Cut and Paste - Static
• Object Linking and Embedding (OLE)
  • Linking - Dynamic
  • Embedding - Static