IS 300 — Lecture 3

- How do we get data into the system—what are the input options?
- How do we get data and information out of the system—what are the output options?
- What classes of machines can a business choose from?

How do we get data into the system—what are the input options?

Devices—a sampling

- Keyboards
- Touch screen
- Light pens/mouse
- Voice
  - "recognize speech"
  - "22nd anniversary"
- Scanners

Source data automation – machine readable at point of origin. Reduce errors, delays, and duplication of effort

- MICR (magnetic ink)
- OCR (optical)
- Bar codes

Image processing – like sending the computer a FAX. Uses scanning plus (optional) OCR.

Very storage intense – what technologies do we need?

Cost/effective storage.

Compressions algorithms

Lossy

Lossless

- How do we get data and information out of the system—what are the output options?

Pixels

Density impacts quality
Density impacts cost

Demo—magnify an image to "pixelate" it

Printers

Lasers versus ink-jet
Intelligent fonts
Truetype
PostScript

Voice

Prerecorded complete sentences
Assembled phrases into sentences
Synthesized sound (phonemes)

VDT

Memory – color depth

Demo—reduce color level to see impact on image size.

Microfilm and microfiche

Archival
Difficult (at best) to use

What classes of machines can a business choose from?

Network Computers (thin clients) – Sun JavaStation

- No disks
- Software provided via network
- Price < $1,000

Personal Computers – Dell PC

- Single user
- Individual productivity support
- Price < $5,000

Workstation – Sun UltraSPARC

- Single user
- Very powerful (CPU, RAM, disk)
- Price < $20,000

Midrange (mini) computers – HP 9000

- Multiple users
- Departmental, high-end servers
- Price $20,000-$200,000

Mainframe computers – IBM ES/9000

- Multiple users
- Departmental, enterprise-wide
- Price $250,000+

Supercomputers – Cray C90

- Very powerful (60 – 3,000 billion inst/sec)
- Problem focus—high-end engineering, weather prediction, sophisticated scientific applications.
- Price $1 million and up

Computer Downsizing—moving applications to smaller machines to take advantage of more power at a lower price