

MIDI

- Musical instrument digital interface
- Tells the controller:
 - Notes
 - Dynamics
 - Length
 - Pitch bend
- Enter information using a MIDI controller:
 - Keyboard
 - Special guitar

Laser Printers

- Similar to a photocopier.
- Laser shines onto drum, charging parts of the drum.
- Ink on the drum is attracted to the page.
- Heat treated to stop the toner coming off,
 - Reliable
 - Good results
 - Economical – 5000 sheets per cartridge of toner
 - Fast
 - Becoming cheaper to buy

Smart Card

- 1 billion in use
- Used for pay phones, payment
- Read/write information to memory using a small computer on the card
- Can be programmed for different applications
- Accessed from a variety of devices including a PC card reader
- The memory card is the oldest and most widely used version of this card
- The microprocessor card is a newer version being introduced

Digital cameras

- Very cheap to run as there are no charges for film or processing
- Equal quality as conventional cameras
- Take lots of photos without changing media
- Charged coupled device (CCD) works like the opposite of a TV to change the picture into a digital format

Inkjet printers

- Cheap
- Use small droplets of ink placed onto the paper

- Very high quality can be created – ‘Photo quality’
 - Print head sprays the ink on to the page
 - Cartridge black or colour
 - Print head stepper motor and track move the cartridge and head along the page

Voice recognition

- Not speech recognition, however the two are often bundled and sold together
- Checks vocal characteristics
- Found in toys
- Predominantly a software technology, not a hardware technology]

LCD

- Thin
- Lighter and consume less power than CRT's
- Conceived in the late 1800's
- Created first in 1971 after which the technology has developed

Bar-codes

- There are two types of scanner
 - Non-contact, several inches to several feet
 - Contact
- Bar codes can be encoded which makes the limited store more efficient. A computer is needed to decode them

Touch screen

- First conceived and developed in the '70's
- First touch screens were curved sensors
- This developed to the transparent models, affixed to the front of monitors we are familiar with today

Magnetic tape

- Not common in domestic use
- Very large storage capacity
- Work on ASCII and CBCDIC codes
- Sequential file access make them suitable for backing up data, but not suited to file storage where immediate access is required
- Data read and written to floppies in a similar manner to a vinyl record, but by magnetising the particles instead of creating a groove

- 8" 160k were the earliest, followed by 5.25" pre-1987 and now 3.5" 1.44Mb although 2Mb versions are available
- Originally many disks were required and would need to be changed. Most often the operating system would be stored on a different disk to that which files and programs were stored

Scanners

- There are three types of scanners:
 - Flatbed – also known as desktop
 - Hand-held
- The image is captured using a CCD in the same way a digital camera works
- The image is sent to the computer via USB, fire wire or parallel port
- OCR software can be used to recognise text so you can edit it with a word processor

Mouse

- Conceived in the '60's
- Cheap and being backed by Apple increased the popularity
- Ball → Rollers → Shaft → Infra-red sensor → Computer