

Personal Technology

Convergence, Portability

MP3 Players

Digital Cameras: Changing Photography

Personal Digital Assistants & Tablet PCs

The New Television

Smartphones: More than Talk

Videogame Systems



Convergence, Portability, & Personalization

- ◆ Digital Convergence
 - ◆ Describes the combining of several industries – computers, communications, consumer electronics, entertainment, and mass media – through various devices that exchange data in digital form
- ◆ Pros:
 - ◆ Multiple use machines such as Xbox that can play games, display DVD movies, and play music CDs
 - ◆ Cellphones with enhancing features such as address books and digital cameras that also shoot videos
- ◆ Cons:
 - ◆ Multiple features that compromise the primary feature, such as an internet refrigerator



Convergence, Portability, & Personalization

◆ Portability

◆ Pros

- ◆ Devices that enable phone and email access from anywhere, portable digital music, and convenient cheap digital photos allow people to remain connected even while on the move

◆ Cons

- ◆ Your boss may expect you to answer e-mail and voicemail evenings and weekends
- ◆ People whom you never meet in person may misrepresent themselves, and/or misunderstand you, since they don't see your body language

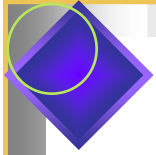
Discussion Question: Have you experienced any of these problems? How did you handle it?



Choice Overload

- ◆ People are unhappy when they have too many choices. One psychologist, Barry Schwartz, has identified several factors:
 - ◆ Regret: People are more likely to regret their decisions
 - ◆ Inaction: People can't decide now because they might later regret their decisions
 - ◆ Excessive Expectations: Reality has a hard time meeting the expectations when there are so many choices
 - ◆ Self-blame: People blame themselves for making the wrong decision

Discussion Question: How many of you have put off buying a computer or other item because the price might come down or a better one might come out?



Popular personal technologies

- ◆ MP3 audio players
- ◆ Satellite, and internet radios
- ◆ Digital cameras
- ◆ Personal digital assistants and tablet PCs
- ◆ Smartphones
- ◆ High-definition TV
- ◆ Videogame systems

MP3 Players



- ◆ MP3 is a format that allows audio files to be compressed so they are small enough to be sent over the internet or stored as digital files.
- ◆ MP3 players are portable devices that play MP3 files
- ◆ Vendors include:
 - ◆ Apple iPod (market leader)
 - ◆ Archos, Creative, Dell, iRiver, Panasonic, RCA, Samsung, Sandisk, Sony, Virgin Electronics
- ◆ Storage methods
 - ◆ Hard drive storage (holds more, costs more)
 - ◆ Flash storage (holds less, costs less)

MP3 Players

Apple iPod

◆ Technology Considerations

- ◆ Storage capacity
- ◆ Sampling rate
- ◆ Transferring files
- ◆ Battery life
- ◆ Color screens and photo viewing
- ◆ Other features such as
 - ◆ FM radio reception
 - ◆ Music recording using extra microphone
 - ◆ Car stereo adapter to connect player to your car's speakers





Podcasting

- ◆ Distributing multimedia (audio/video) files over the Internet using syndication feeds, for playback on mobile devices and personal computers.
- ◆ Requires no studio or broadcast tower and is not regulated
- ◆ Allows amateur deejays and hobbyists to create their own radio shows

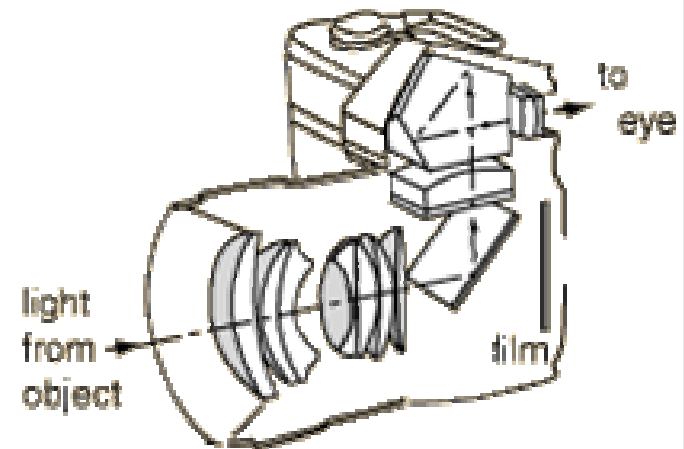
Digital Cameras

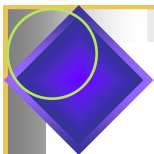


- ◆ Cameras that take photographs but do not require film
- ◆ Very competitive field with many new product releases
- ◆ Types to digital cameras:
 - ◆ Point-and-shoot digital camera
 - ◆ Automatically adjusts settings i.e. exposure and focus.
 - ◆ Easy to use, but manual controls can allow user to tweak the settings to get better photos.

Digital Cameras

- ◆ Single-lens reflex (SLR) digital camera
 - ◆ Uses a reflecting mirror to reflect the incoming light so the viewfinder shows what the lens is framing.

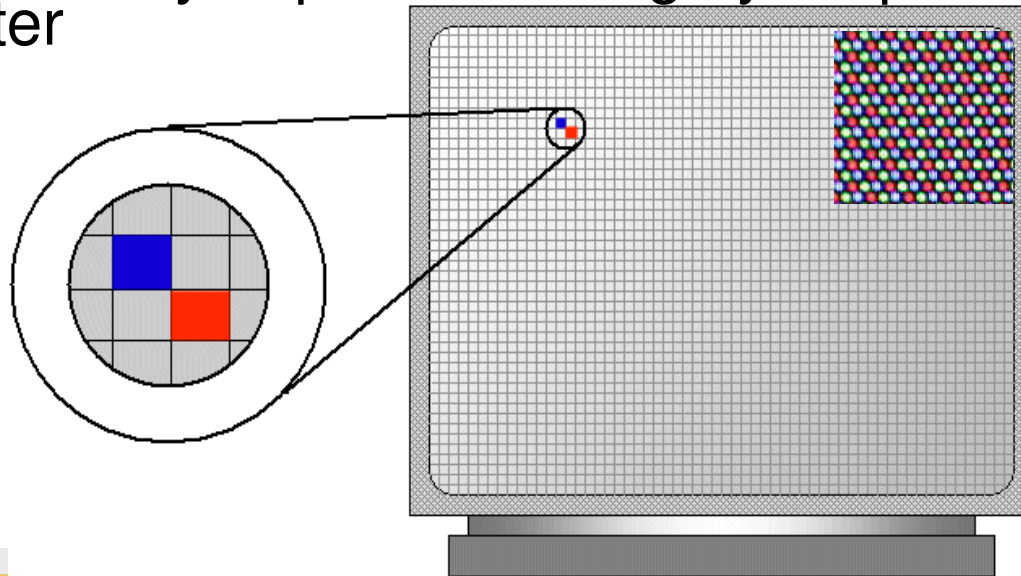




Digital Cameras

◆ Resolution

- ◆ Measured in megapixels, or millions of picture elements
- ◆ Measure the maximum resolution of an image taken by the camera
- ◆ Important if you plan to enlarge your photos – more is better



Digital Cameras



◆ Storage

- ◆ Uses flash memory cards
- ◆ 128 megabyte card holds 80 images from a 3 megapixel camera, while 1 gigabyte holds about 600 still images

◆ Lenses

- ◆ Digital zoom
 - ◆ Means the image is cropped in the camera
 - ◆ Can produce a grainy photo
- ◆ Optical zoom
 - ◆ Enlarges the subject without you needing to move closer
 - ◆ Lens extends to focus on distant objects

Digital Cameras



◆ Battery life

- ◆ The camera requires a battery to function
- ◆ Some rechargeable batteries are available with many models
- ◆ Some recharge in the camera, while others require a separate charging stand

◆ Video clips

- ◆ Most digital cameras can shoot movies, too
- ◆ 1-gigabyte memory cards can shoot as many as 44 minutes of video at 30 frames per second

Digital Cameras

- ◆ Principle methods for transferring images
 - ◆ Use a direct connection between your camera and your PC. Requires you to install software on the PC
 - ◆ Insert the memory card into a card reader
 - ◆ Put your camera into a cradle attached to the PC
 - ◆ Use a photo printer with a built-in card slot
 - ◆ Use a portable CD burner
 - ◆ Use an MP3 player
 - ◆ Use a photo-printing kiosk



PDA's and Tablet PCs

- ◆ These are both small computers
- ◆ Personal Digital Assistants (PDAs)
 - ◆ Have touch-sensitive screens so you can enter data with a stylus by tapping or writing on screen
 - ◆ Store data in RAM that stays on even when the unit is off by using the PDA's battery

PDAs and Tablet PCs

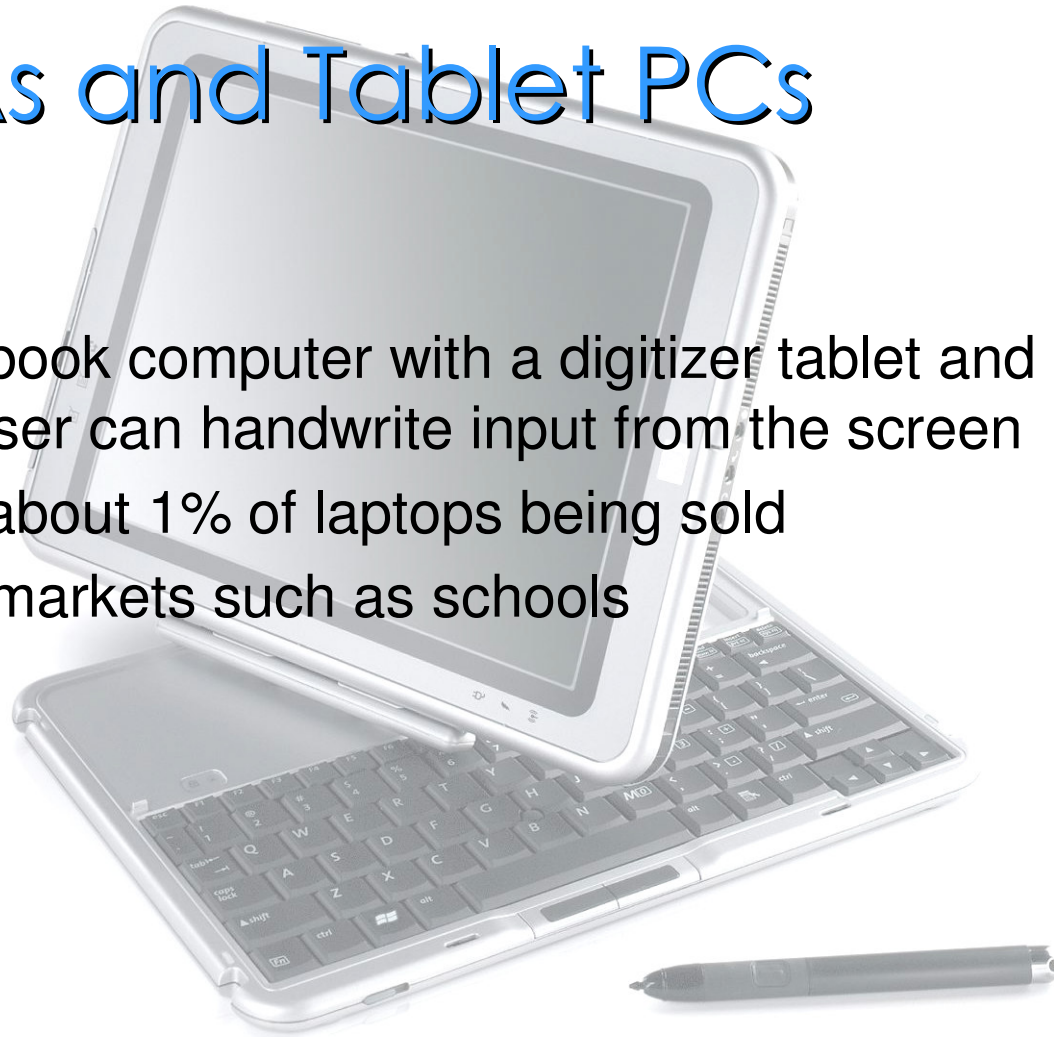
- ◆ Can be augmented by flash memory
- ◆ Commonly use lithium ion batteries
- ◆ Transfer files to your PC in one of three ways
 - ◆ Pull out the PDA's flash card and insert it into the PC's card reader using a USB port
 - ◆ Put your PDA into a special cradle plugged into a USB port
 - ◆ Transfer data wirelessly



PDAs and Tablet PCs

◆ Tablet PCs

- ◆ A special notebook computer with a digitizer tablet and a stylus so the user can handwrite input from the screen
- ◆ Recently only about 1% of laptops being sold
- ◆ Used in niche markets such as schools



The New Television

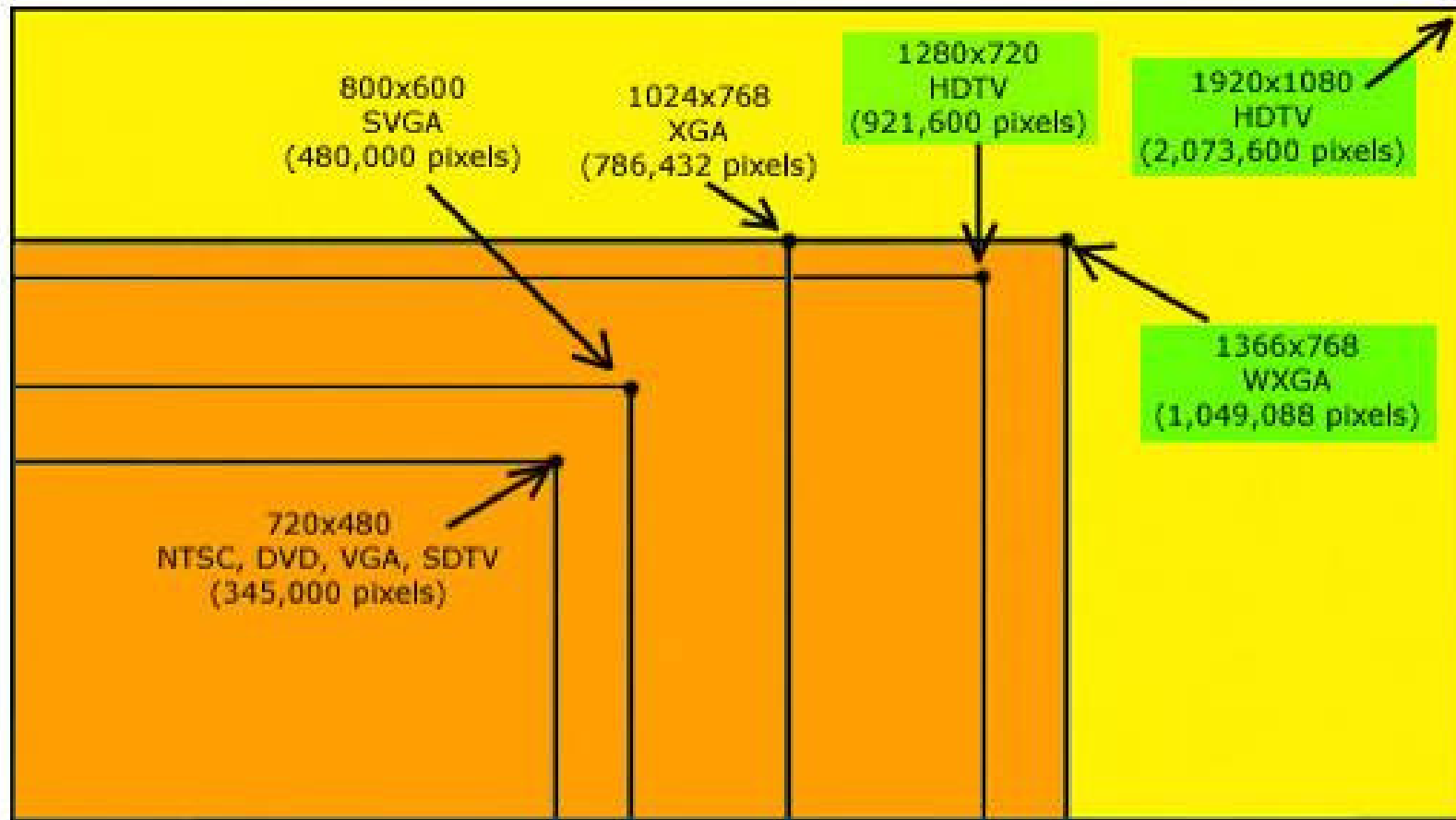


- ◆ Three kinds of TV

1. Digital television

- ◆ FCC has mandated that all TV stations be capable of digital broadcasting by 2006 (HK will start DTV broadcasting in 2007)
- ◆ Currently most digital systems convert analog broadcast signals into digital with some loss of detail

WXGA Compared to HDTV





HDTV

2. High-Definition television (HDTV)

- ◆ Works with digital broadcasting signals
- ◆ Has broader screen and 10 times the pixels as standard TV
- ◆ Has 16 to 9 aspect ratio and 1,080 lines on a screen; crisper details than SDTV

3. Standard-Definition television (SDTV)

- ◆ Has aspect ration of 4 to 3 and 480 (576) lines on a screen
- ◆ Requires less bandwidth to transmit than HDTV

Smartphones

- ◆ Cellular telephones with microprocessor, memory, display screen, and built-in modem
- ◆ Offer the following features
 - ◆ Text messaging
 - ◆ Cameras
 - ◆ Music players
 - ◆ Videogames that can be downloaded and self-installed
 - ◆ E-mail access
 - ◆ Digital TV viewing
 - ◆ Search tools
 - ◆ GPS locators



Smartphones



- ◆ Basic elements of a mobile phone
 - ◆ Storage
 - ◆ Data is stored in ROM
 - ◆ Data does not disappear when phone is turned off
 - ◆ Input
 - ◆ Have a keypad for storing numbers
 - ◆ Microphone for picking up your voice
 - ◆ May have a touch-sensitive screen that uses a stylus
 - ◆ Output
 - ◆ Speaker to hear voice calls
 - ◆ Display ranging from LCD to full-color high-resolution plasma
 - ◆ May also use Wi-Fi or Bluetooth

Smartphones

◆ Smartphone services:

◆ Text messaging

- ◆ Can send text to other phones and to email accounts
- ◆ Speed of creating messages is quicker or slower than traditional Morse Code? (see this [video](#))

◆ Downloaded ringtones

- ◆ Ringtone: the audible sound a phone makes to announce an incoming call
- ◆ May be free or at cost

◆ Email

- ◆ The most well-known handheld device for sending wireless email is the BlackBerry.



BlackBerry



- ◆ The BlackBerry is a wireless handheld device introduced in 1999 which supports **push e-mail**, mobile telephone, text messaging, internet faxing, web browsing and other wireless information services.
- ◆ **Push e-mail** is used to describe e-mail systems that provide an "**always-on**" capability, in which new e-mail is instantly and actively transferred (pushed) as it arrives by the mail server to the e-mail client.
- ◆ BlackBerry first made headway in the marketplace by concentrating on e-mail. The devices are very popular with some businesses, where they are primarily used to provide e-mail access to roaming employees.

Smartphones

- ◆ Smartphone services (continued):
 - ◆ Internet Access
 - ◆ To perform web browsing using GPRS or 3G or WiFi
 - ◆ To use VoIP to make calls on the Internet
 - ◆ Photography
 - ◆ Games
 - ◆ Radio and music playing
 - ◆ TV and video
 - ◆ GPS locator
 - ◆ And more.....

