



Career Recent Technologies

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Other & Recent Technologies

- Helper programs
 - » to send mail
 - » run audio/video applications
 - » etc
- Authoring Tools (FrontPage98 for eg.)
- VRML, Dynamic HTML, ASPs, etc
- Video Streaming
- Push Technology
- Web Data-Base Integration (through cgi)
- E-Commerce

Audio

- Realtime music and spoken words were brought to the web by RealAudio
- This is a streaming technology that opened the door for broadcast style dynamism
- Concept was soon applied to video, video-conferencing and multimedia delivery (Plugin--RealPlayer)
- Other audio formats include .wav, .au (from Sun, low telephone quality), AIFF (audio interchange file format)

Real-time Audio Formats

- Currently dominated by Progressive Networks (ww.real.com) Real Audio format
- Over 28.8K modem RealAudio is == mono FM Radio
- ISDN format files provide near CD quality
- New real-time audio formats include
 - » Microsoft's Netshow, Beatnik (from Thomas Dolby's company), Headspace, Liquid Audio's authoring system
- For more info on Internet audio see www.soundorama.com/formats.html

Video

- Majority of down-load and play use Applesq QuickTime
- AVI and MPEG (Motion Picture Experts Group) are also found
- Most video is recorded at 160*120 pixels (due to bandwidth limitation)
- Also limited color and low frame rate is used
- To play downloaded files through Browsers, links are made in the document using the anchor tag

Video (Realtime)

- Real-time video is also available on the net, established companies with their own streaming formats include
 - » VivoActive (www.vivoactive.com)
 - » XingTech (www.xingtech.com)
 - » VDO (www.vdo.net)
- All formats support windows (only few support Mac or Unix)
- Examples of sites include cnn.com, hollywood.com, universalstudios.com, etc.

Unicast and Multicast

- Websites delivering streaming media operate in unicast mode (one-to-one)
- They provide VCR type of controls
- Multicast is video content to larger number of audience
- Small unicast audience may be supported through client/server systems
- For true multicast MBONE may be required
- Problems become severe as webcasting tries to emulate high fidelity audio/video

Quality Limitations

- Broadcasting on the web is cheap
- Limitations are also due to modem speeds (56K or even 28.8 speeds)
- Images are generally jerky, grainy (digital)
- Example (Try www.universalstudios.com)

WebCams

- Web Cameras are cheap
- Good quality pictures can be snapped and updated using ftp
- Video clips of small sizes can also be made
- jpg files can be uploaded to sites hosting webpages at low rates such as once every 60 seconds
- Creative WebCam with ISpy software is a solution

Push Technology

- In contrast to pulling a web page by clicking, you can schedule a pull (call it a push)
- Systems such as Pointcast deliver regular updates to end-users (www.pointcast.com)
- By setting up delivery channels, push systems deliver information to the user without having to conduct search
- Recent versions (Marimba www.marimba.com and BackWeb www.backweb.com) have incorporated web-based content and support for multimedia.
- Users control the content actually pushed to the desk (unlike in the case of broadcasting)
- Smarter methods of surfing and content caching, and end users surf local content

Connecting To The Internet

- Things needed to connect to the Internet
 - » Computer: PC, SUN, Mac or other
 - » ISP connection
 - . Dial-up connection
 - Telephone connection, ISDN
 - . Dedicated leased lines
 - T1, E1, ATM, SONET
 - Connect to an existing network
 - » Software
 - . Email client, WWW browser, TCP/IP network software

Internet Service Providers

- Provide connection to the Internet, just like telephone companies give connection to Telephone network.
- Connection Options:
 - » Dial-up Connection: Data over telephone lines, speeds upto 33 Kbps
 - » ISDN: Integrated Service Digital Network: Even though around for a long time, getting very popular now, Speeds upto 128 Kbits/sec

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- Summary
- Demo