ATG 3021 Putting It Together

May 2002
5 steps of Video

**Acquire/ Create**
- Analog
  - TV
  - VHS
  - 8mm
- Digital
  - CG
  - DV
  - DVD±R??
  - microMV
  - DVD Video cop. protected CSS, ID2, MV

**Capture/ Transfer**
- Analog
  - camcorder
  - A->D box
  - Capture card
  - IEEE1394 or USB 1/2
- Digital
  - Firewire card

**Edit**
- Ulead VideoStudio
- Adobe Premiere
- Pinnacle
- SONY ES
- Media 100
- AVID
- MGI, Discreet, In-Sync, Sonic Foundry etc.

**Store/ Make**
- Analog
  - VHS
  - SVHS
- Digital
  - DV tape
  - CD-R??
  - DVD±R??

**Deliver**
- Streaming
  - MPEG-1/2
  - Real
  - Apple QuickTime
  - MS WMV
  - MPEG-4

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ATG 2021 Intro to Digital Video
ATG 3022 DV Editing – Adobe Premiere 6.0 (2 days)
ATG 2022 Intro to DV Editing – VS6
ATG 3021 Putting It Together
Deliver

- **CD-ROM (CD-R, CD-RW) 650/700 MB**

- **DVD-ROM (DVD-R, DVD-RW, DVD+RW, DVD-RAM, DVD+R) 4.7 GB per sided**
  - Combine programs, web pages, graphics, animations, video (usually QuickTime)

- **Video (off-line)**
  - CD : VCD ~60 minutes MPEG-1 (352x240)
  - CD : MiniDVD ~10 minutes MPEG-2 (720x480)
    - optionally embeds a DVD player application like cDVD
  - DVD : ~ 90 minutes MPEG-2 (720x480)
Deliver (cont’d)

• Video streaming
  – University supports
    • MediaHawk: .mpg MPEG-1, MPEG-2 (1 Mbps – 15 Mbps)
    • Real version 8, One: .rm format (28kbps – 1 Mbps)
      (.ra in version 6, 7 (G2))
  – Only available to those department that runs its own servers
    • QuickTime version 4, 5: .mov files
    • Microsoft Windows Media 8: .mwv (.asf in version 6 & 7)
  – Upcoming MPEG-4 (already in use under various variants in Real
    One, QuickTime 6, Windows Media 7, 8.)
Video size

- VideoCD still expands to full screen during playback even natively it is only “quarter screen” It is still acceptable for even most movies.
- You can make DVD from VHS tape over antenna! But with ~200 lines of resolution. GIGO.
- Streaming and video on CD-ROM doesn’t need to small stamp size video. They got bad rep. from early days of pre real 5.x and old CD-ROM for 1x, 2x drive.
- The current generation MPEG-4 codec can be “full screen (640x480)” at near DVD quality using >700 Kbps
CD-ROM/DVD-ROM

• Treat it as a web site
  – Static
  – Update via live network connection

• Traditional Application Development
  – Program in C/C++, Visual BASIC, Delphi

• Authoring programs
  – Macromedia : Director 8.5.1, Flash MX, Authorware 6.0
  – Others : DemoShield, Asymmetrix Toolbook

• Burning software
  – For DVD±R?? need Roxio EasyCD Creator 5.x, aHead Nero 5.5.x, Veritas PrimoDVD 2.x (RecordNow 4.x?)
Video (CD/DVD)

• Authoring
  – DVD Wizard in Ulead Video Studio 5/6 (does VCD, SVCD too despite the name)
    • Limit to one video file (+ one intro video)
  – Bundled with fireware card and DVD±R?? Drive
    • MyDVD 2.x (upgradable to DVDIt SE/PE) , 3.x
    • Pinnacle Impression SE 2.2
    • Mediastream neoDVD (DO NOT INSTALL on A30/XP, it will destroy our load, cannot boot anymore)

• Disk Space, disk space, and more disk space
  – Sometimes videos need to be demux, transcode, multiplex before it is ready to burn to DVD
  – Besides the 4.7G per DVD, need at least another 4.7GB temporary during the disc creation process
DVD Wizard

- Create DVD/VCD in Finish or Export
- 8 clicks and you are done
MyDVD 2.x

- Multiply video files
- Embed DVD player
- “Non-standard” Windows UI
- 3.x is totally different product for “home/consumer market”, no longer a subset of the DVDIt family
Others

- Just like Video Editing software (Adobe Premiere -> various Avid products), from $300 to > $40,000

- Ulead DVD Movie Factory
- Roxio (MGI) VideoPack
- Pinnacle Impression Pro
  - Multi angle, multiple audio tracks
- Sonic Solutions (Daikin)
  - DVDIt! SE, PE
  - (Presenter, Informer)
  - ReelDVD
  - DVD Producer
  - DVD Fusion
  - Scenarist
- Apple iDVD, DVD Studio Pro

- Web-enabled DVD
Streaming

- **Real**
  - Save directly in Video Studio or Adobe Premiere
  - Use Real Producer (Plus)
  - Use Multiple bit rate option for both 56Kbps modem and network (512Kbps) users.
Streaming UI

- Embed player in web page vs standalone player e.g. http://imej.wfu.edu/articles/1999/2/03/demo/example1/
Streaming setup

- 2 Files
  - .rm video file goes to the streaming server `\netmeeting\rtsp`
  - .ram or .rpm (standalone player or embedded in web page) goes to `\acfiles\www-home`

Web Server
`\acfiles\www-home`
lookatme.ram or itisfun.rpm (metafile)

Real Server
`\netmeeting\rtsp`
(users don’t need to know where it is)
myvideo.rm (the real real video)

To the viewers
http://www.wfu.edu/~yipcw/temp/ibm-plan.rm

Inside the file, just one line
rtsp://real.wfu.edu/yipcw/a-brilliant-plan.rm
Windows Media

- Media Encoder 8
More streaming

- SMIL for “complete” package – synchronize slides and text
  - Hand coded for maximum flexibility
  - Real Slideshow
  - Real presenter (Plus)

- Microsoft PowerPoint LiveBroadcast
- Microsoft Producer add-in to PPT 2002 (XP)
Custom built SMIL solutions

- **Simple**
  - http://atg.wfu.edu/projects/test/cybershow-g2/
  - http://www.wfu.edu/organizations/TLC/p1-5.smil

- **Elaborate**
  - Microsoft Media Player, Apple QuickTime Player, Real One Player Start Pages
  - May require complicated and expensive tools
    - Totally Hip’s LiveStage Pro for QT
    - Digital Renaissance TAG editor or GRiNS Editor, Real Presenter One (Accordent) for Real
Real slideshow
Real Presenter

• 8.x (Basic or Plus)
Microsoft Producer for PowerPoint XP
Summary

• CD/DVD authoring
  – Director

• CD/DVD based video
  – DVD Wizard MyDVD

• Streaming Video
  – Real Producer

• PPT/Slideshow packaging
  – Real Presenter/Microsoft Producer