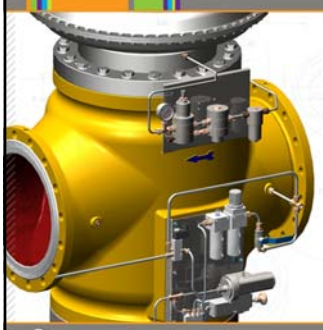
SolidWorks WORLD 2007



Producing Multimedia Training Materials: Tools and Techniques

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Design with VISION

Presentation Goals

- Help you understand how to make instructional videos
- Provide examples
- Provide techniques and tips

Example Video

Why Video?

- Best for technical instruction
- Picture worth thousand words
- 30 pictures per second worth …
- More importantly
  - Very rich media
  - Can be re-edited and improved
  - Convenient (asynchronous, players)
  - Repeatable (at no extra cost)
  - Compress time, improve learning efficiency
  - Turbocharge education (faster and more learning)
  - People seem to like it (movies)

Where do we begin?

- Stage
- Audience
- Content
- Process

Stage: Video Editing Software

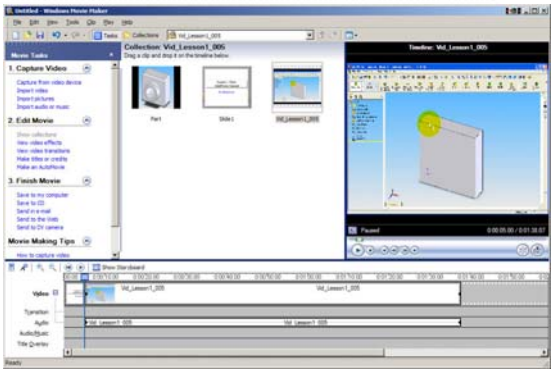
- Adobe Premiere (Production Studio)
- Apple iMovie2 (Macintosh)
- Camtasia Studio
- Adobe Captivate
- Microsoft Movie Maker
- Ulead Videostudio
- Adobe (Macromedia) Flash
- Adobe Encore
- And Others…

Stage Characteristics

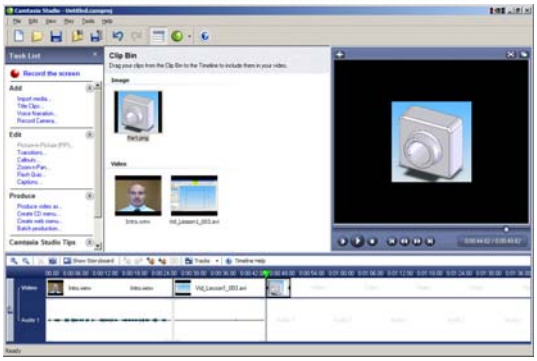
- What can be included:
  - Digital live video (dv)
  - Digital computer video (wmv, mov, avi, mpg, etc.)
  - Computer images (jpeg, bmp, tif, etc.)
  - Audio/voice (wav)
  - Music (mp3, wma, aac, etc.)
- Holding bucket, where media in imported
- Timeline for composing and editing
- Preview window for results
- Miscellaneous tools (e.g., cropping, transitions and effects)

Stage Examples

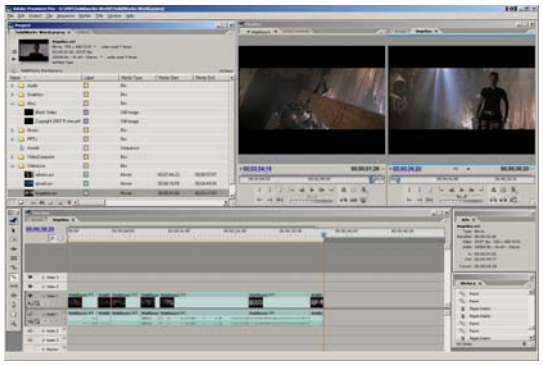
Windows Movie Maker



Camtasia Studio



Adobe Premiere



I like Adobe Premiere (Production Studio)

- Good reviews
- Good company reputation
- Comprehensive set of production tools
- Powerful (many tracks, overlays, transitions, audio/video effects)
- Can import many file formats
- Can export many video formats (.wmv, .mov, .rm, .avi)

- However, it has a longer learning curve
- And it is more expensive than others

Composing the Video (i.e., your movie)

- Plan
- Collaborate
- Create script
- Practice
- Improve

Video Components

- Live video
- Computer video
- Audio
- Screen captures
- “Other” graphics
- Titles
- Music

Live Video

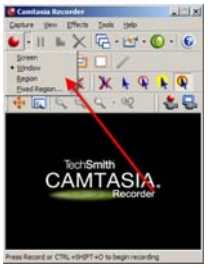
- What is the Instructor’s (Actor’s) role?
- Advantages
  - Brings life to movie
  - Personalizes
  - Entertaining
- Disadvantages
  - Entertaining
  - Paced by real time (lips/sound)
  - Quality dependent upon actor
  - Tip
    - Keep your live role to a minimum

Live Video Method

- Recording with your DV camcorder (example)
- Getting DV from camera into Adobe Premiere (example)

Computer Video

- Camtasia Recorder
- Alternatives:
  - Adobe Captivate and others
- Tips
  - Practice
  - Use a good mouse
  - Record your voice with video
  - Screen size: aspect ratio
    - 720x480, 1080x720
    - Quickeys
  - Remove (by editing in Premiere) any delays
  - Compress time



Editing Computer Video with Premiere

- Video example

Audio

- Adobe Audition

- Alternatives:
  - Audacity (free)
- Tips
  - Voice pacing movie
  - Quiet (not noisy) background
  - Use a good microphone (Samsom)
    - Quality comparison
  - Normalize. Delete at zero crossings. Remove noise.

Microphones

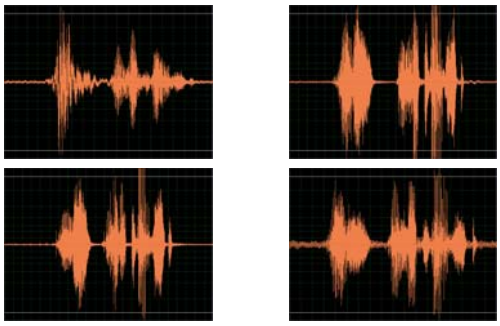
Computer

Telex

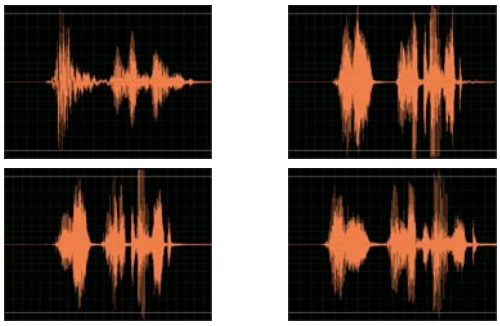
Sony

Samson

Microphone Examples (without noise reduction)



Microphone Examples (with noise reduction)



Editing Audio

Editing Audio

- An extremely important and powerful technique
- Audio “podcasts”
- Audio often used to pace the video

Screen Shots

- Camtasia SnagIt
- Captures screen, windows, region, plus more
- Tips
  - Match screens to production size
  - Screen size:720x480
    - Quickeys for quickly sizing window
  - Be careful of aspect ratio (1:1 versus .9:1)
    - Create practice “round”

Other Graphics

- Photos
- Scanned images
- Photoshop and other computer applications
- Tip
  - Compressed images seem to produce smaller video, with “equal” quality
  - Optimize jpegs (jpeg Optimizer)

Titles and Word Slides

- PowerPoint
- Titles within Premiere
  - Copyright notice
- Tips
  - In PPT, save as “jpeg”

  - Recreate transitions
  - Keep words to minimum (podcasts)
  - Consider your “movie” theme
  - Using PowerPoint provides easy re-delivery

Music

- iTunes (Apple)
- Many others: Windows Media Player, Musicmatch, etc.
- Technique: “Rip” music CD

- Tips
  - mp3, not wma or acc
  - Set iTunes for mp3
  - Edit in Audition
  - Consider copyrighted problems

Putting it all together!

- Import into stage software
- Drop onto timeline
- Crop, stretch, and compress
- Time the audio to the video
- Example

Exporting (Who is to use this video?)

- Computer, Internet, CD, DVD, iPod
- Tradeoffs: Size, quality, compatibility, playability
- Windows Media
  - PC based
- RealNetworks
  - PC and Mac
  - Can be streamed
  - Good compatibility
- Flash
  - PC and Mac
  - Streaming format
- Podcast
  - Video and/or audio
  - A “portable” format
- Examples: see my website

Exporting Tips

- The world of codecs
- Settings can be tricky (example)
- Screen size (720x480, except podcasts)
  - DVD's can use this size, and 720x540
- 15fps for Internet, otherwise 30fps
- Exporting can take time
  - Depends on computing power

Warnings!

- This is not easy
- Very time consuming

- Great rewards!
- Fun!
- You can be the director.

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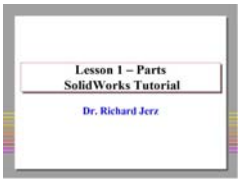
Some Production Notes for SW Lesson 1

- Length of movie: 6 minutes
- File sizes:
  - Flash: 29.5MB
  - Windows Media: 19MB
  - RealNetworks: 18MB
  - Mpeg4: 17MB
- Target Internet bitrate: 400 kbps
- Original content size: 238MB
- Time to produce: approx. 5 hours
- Time to export to WMV: 45 minutes
- Computer: Dell Precision M60, 1.73 mHz, 2GB RAM, 120GB Hard disk, nVidia graphics



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End

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Questions & Discussion

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References and Costs

- Adobe: Production Studio $1,200
- Techsmith: Camtasia 4 and SnagIt, $319
- Samsom: Q1UQ1 USB Dynamic Mic, $49
- Sony DCR-H40 DV Camera, ~$500
- CE Software: QuicKeys, $80
- Xat.com: jpeg Optimizer, $39

- Apple Computer: QuickTime Pro, $30 (for podcasts)
- Adobe: Flash 8 Professional, $699 (for Flash 8 encoder)

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