

## Getting Started with Internet Multimedia

So you want to be in (Internet) pictures? We all love the movies, as suggested by today's camcorder sales and even by the '47 Warner Brothers movie "So You Want To Be In Pictures." As technical communicators, we may feel most comfortable with text but we also know that multimedia and the Internet are hot. So if you'd like to try producing an Internet multimedia title, how do you get started? Is there an inexpensive and easy way? Yes there is. Read on and you'll be able to take the Internet pictures plunge, actually building "Internet Movies" on a shoestring. Since I am a (sometimes-reluctant) Windows user, I'll describe both multimedia standards and development methods in Window's terms. However, these apply to any platform, including MACs. Let's get started with some terms and concepts.

### Multimedia 101

When you think about multimedia, what comes to mind? Certainly pictures, animation, and sound. Whether you are in the Windows, MAC or UNIX worlds, you can quickly become overwhelmed by the choices of graphic formats, sound, and animation techniques. Graphic *formats* are only one dimension; other graphic dimensions are *quality* and *richness*. Learn about graphic formats, quality and richness and you're well on your way towards understanding sound. And since movies are nothing but series of pictures, you'll soon be on your way to understanding "moving pictures" too.

Why this complexity in graphics? Partly this is due to the variety of tools to create pictures (including scanning them), but it is also due to the need for different features in pictures. One easy dichotomy for all picture formats is "bit-mapped" versus "vector." This division is similar to the choice of analog versus digital, or cotton versus polyester. Bit-mapped images, also called "raster images," are simply sequences of bits; vector images use commands in those streams to define various structures. Bit-mapped images are "natural," while vector images -- smaller and more easily changed-- have an artificial quality. A bit-mapped horizontal line ½" wide and 5 inches long might contain a series of 10,000 graphic bits. The same line, expressed by vectors, would be much smaller --possibly 1/100th the bit-mapped size-- and would use commands to define the line: "the line starts at point a, ends at point b, and is ½" wide." If you're drawing only straight lines, and if you want to make easy changes to them (such as their width), you would probably use a vector format. If you wanted a line with some subtle curves or texture, you would probably prefer a bit-mapped image.

What about quality and richness? Let's first consider *source richness*, often called depth. Pictures -- originals or scanned-- can be simply black and white (line art), many shades of grey (as in a black and white photo), or they can be in color. Colored pictures can be comic-strip quality (with only 256 colors), or they can approach nature with 16 million (so-called RGB) or even larger numbers of colors. As to *output quality*, all digital pictures are represented by pixels or dots, the smallest points you can see on a screen or print on paper. The higher the quality-- the greater number of dots-- the clearer the pictures will appear. Although 72 dots per inch are fine for pictures shown on a computer screen, higher resolutions (300, 600, even 1200 or more) can be required. Balancing the quality of graphics with the size that is acceptable is often difficult; you want web graphics to be displayed quickly, although pictures in print should look clear and crisp.

Sound, a second component of multimedia, is surprisingly similar to graphics. Sound comes in both sampled formats such as WAV (similar to "bit mapped" graphics) and interpreted or synthesized formats such as MIDI, similar to vector graphics. Music on audio CDs is the former; electronic MIDI music is the latter. Sounds come in various resolutions or qualities; these are often labeled "telephone, FM-Radio, and

CD" quality. Sound can also be monaural (one channel or sound track) or stereo (two channels). As with graphics, the richer and higher quality the sound, the larger the sound file.

And movies? Think of them as sequences of pictures with sound, with the same dimensions of richness and quality.

With this all-too-quick introduction we can proceed to building multimedia movies for the Web. For more information about sound, see the sidebar review of "WAVs, MIDIs & RealAudio," published by MIS Press.

### **Get Acquainted With Internet Streaming**

We have all had the unhappy experience of waiting for a web page to finish downloading. If only there were a way to get those pictures, or the sound, more quickly. It is possible to create screen videos with modest and high-quality tools such as Lotus ScreenCam®. However, at 1-2 MB for even the smallest such video, downloading on the net takes so long that only the most motivated will wait. You can avoid the download delay, and the enabling technology is called "streaming." Simply put, when you stream a multimedia object (picture, sound, or movie) the recipient gets to use that object shortly after asking for it. There is no need to wait for the whole thing to finish loading. Pick the right streaming tools to build your movies-- at this time my favorites come from RealNetworks-- and you even get a bonus: these tools can shrink the size of the files in subtle ways so that they are smaller than they would be in their natural state. Smaller size, and no waiting; these are both winners!

### **How to Build a Net Multimedia Slide Show**

Enough teasers. What do you need to build your own slide show, and just how small is the shoestring do you need to get started? Required equipment is pretty modest: a multimedia Windows 95 Pentium PC, 200 Mhz or faster, with about 32MB memory and enough disk to store your work. "Multimedia" means that your PC has at least a microphone and sound card; if you want fancy movies from your camcorder, you'll need a more expensive video capture system.

What about the software? Inexpensive graphics editing software (such as PhotoDelux or Photoshop LE from Adobe), powerful but inexpensive sound editing software (such as Sound Forge XP), and inexpensive or free software from RealNetworks both to produce the chef d'oeuvre and for users to consume it. The graphics editing software probably comes bundled with a scanner, although street prices are around \$50, the same price for Sound Forge.

RealNetworks products are the key. At minimum you'll need Real Producer G2 ("Second Generation"), and your consumers will need RealPlayer G2. If you have Microsoft PowerPoint '97, you should also get Real's PowerPoint7 plug-in. Real originally decided to give away the PowerPoint plug-in starter kit and now charges a modest price for it. Real also is giving away a similar and even more powerful product, SlideShow, which --with an AVI recorder-- can accomplish the same streaming result. I've used RealProducer G2 Plus to produce high-quality streaming audio clips, and the result is awesome. If you'd like to hear samples, designed for a minimum 28KB modem, check out <http://world.std.com/~stlukes> and follow the "express link" to music.

OK. Let's assume for starters that you've got the free stuff; let's produce something useful and fun: a family slide show delivered from your own web site. The steps are simple:

- ◆ design your show -- goals, size, quality
- ◆ assemble electronic versions of photos for your show

- ◆ plan and write a script for what you want to say
- ◆ get and load the RealNetworks PowerPoint plug-in tool
- ◆ load the pictures into PowerPoint, one photo per slide
- ◆ narrate each slide
- ◆ publish the show
- ◆ deliver it to your web site.

Use any picture format supported by PowerPoint. JPG is a flexible format that works for me. If you do not have access to a scanner, many consumer photo developers --even drugstores-- offer images on diskette. Writing your script in large double-spaced letters is a good idea if you're apt to stuffer from electronic stage fright. I suggest setting up PowerPoint with a white background (to simulate a slide show screen). After you've narrated each slide, simply select Tools/Publish to RealMedia. Up pops a screen wizard that guides you through the process of creating a playable real media file with the required ".rm" extension. You will also need to create what Real calls a metafile, containing a pointer to the web page where you will put your "rm" file. Real provides free manuals in Acrobat PDF format describing the details, including a very helpful 26-page user guide entitled "RealPresenter7 Plug-in for use with Microsoft7 PowerPoint7 97."



Figure 1,  
RealPresenter Wizard Screen

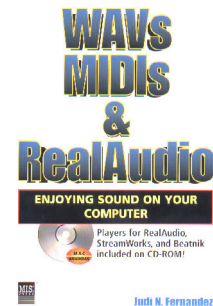
Want to get even fancier? Real also supports a new XML-based multimedia standard called "Synchronized Multimedia Integration Language" (SMIL). Since you've written a narrative for your slide show, you can segment your narrative so portions of it appear on-screen with each picture, at precise intervals during the playback. As with other techniques, Real provides a wealth of information about creating SMIL presentations. Real's SlideShow delivers SMIL-compliant shows too.

Want to see some slide shows in action? Check out my web site, <http://world.std.com/~bboeri>, and you'll see example, including a SMIL-based close-captioned tour of Notre Dame Cathedral in Paris, and a short audio-video tip explaining a new feature of Acrobat 4. The latter, also designed for slow modems, shows how modest-but-effective distance learning modules can be delivered using minimalist tools.

Want to be in pictures? It's Real easy.

## Book Review SideBar

**WAVs MIDIs & RealAudio: ENJOYING SOUND ON YOUR COMPUTER.** Judi N. Fernandez, MIS Press, an imprint of IDG Books World Wide, Inc. Copyright 1998. \$24.99 USA, softbound, 327 pages plus companion CD-ROM. ISBN 0-7645-7507-4. Category: Multimedia. Reader Level: Beginning to Advanced.



If you want an easy-to-read yet comprehensive book on digital audio, there are few to pick from. If you are interested in web-based audio, there are even fewer. Luckily, **WAVs MIDIs & RealAudio** fills the bill on both counts. Whether you are a MAC or PC user, you'll ramp up quickly to understand the difference between sampled sounds (like WAV or AIFF) and interpreted or synthesized sounds (like MIDI). Fernandez' easy-to-read style makes the subtle benefits of each format easy to understand. After an excellent introduction to computer sounds, Fernandez explains streaming Internet formats, including RealAudio. With lots of screen captures she shows you how to use the RealPlayer and deal with (yes) inevitable problems. Although the book was published before Real's release of the latest G2 format, her presentation of RealAudio is still very current. The companion CD-ROM is a real treasure trove. Not only does it contain various sound and plug-in players (including QuickTime version 3), Fernandez has also included several sound recorders and editors. Lastly, the CD-ROM contains Acrobat PDF files of not only every chapter in the book but appendixes beyond the printed Appendix A. These additional appendixes provide more information about MIDI, Audio CDs, including sound on Web pages, and handy Internet site references. Unless you want your web movies to be silent films, buy this book.

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