

Creating Multimedia

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In the first information sheet we covered setting up a PC to play multimedia material. This time we provide some basic information about creating your own.

As with any new activity it is a sound idea to start on a small scale to learn the basics and to determine if it is worthwhile and something you want to do. The key factor in any presentation is how well one plans it. Taking time to prepare a "shooting" script or story board will result in a better final project and cause less frustration. Often there is a tendency to include everything (text, graphics, sound, and video) just because all are possible. Giving careful thought to why you might want to have sound or video will save time in the long run and create a better product. Putting together a solid multimedia product takes time; therefore make certain you have good reasons for each image, sound, or motion you incorporate.

Hardware Considerations

You will need all of the hardware we described in our first information sheet. In addition you may need a scanner, especially if you want to use your own creations and not "shop worn" clip art images. (Remember copyright laws apply to images, sound, and other media as well as printed text. The best safeguard against violating someone's copyright is to get permission. Another good guiding principle is, if in doubt don't use it.) If you invest in a scanner, you will want to buy a desktop (flatbed) rather than handheld model. While handheld units are less expensive to purchase they make it difficult to scan large images and you need a very steady hand to get accurate images. With prices dropping you probably should buy a good quality color scanner as well as a high end OCR (Optical Character Recognition) software. The OCR software will allow you to scan text in addition to images. (A good OCR product can also save staff time in rekeying documents so it is more than just a multimedia investment. Flatbeds are good for photographs but will not work with slides or negatives. For those images you will need another unit designed for that purpose. A good quality flatbed color scanner, OCR software, and slide scanner will cost approximately \$800.

Should you want to add video to the presentation you will need to add a video capture card to the PC. What the card does is allow you to display full-

motion video on the monitor and then save either still images or motion sequences to a disk. (Note: a video capture card is not the same as a video card, you will need both.) With a video capture card, such as Smart Video Recorder Pro or Video Bluster, you can (after installing the device driver(s)) use several video input devices - a VCR, videodisc player, or video camera. Remember, as appealing as video is, it requires large amounts of disk space and memory. Just four seconds of full motion can require more than 10MB (for a full screen image) and 32 MB of memory. Large amounts of data can also cause problems in moving the data from one device to another.

One option for handling large files is to reduce the size of image on the monitor; another is to reduce the number of frames per second. Image compression is yet another way to handle the problem. (Remember compressing a file will mean some loss in image quality.) When one decompresses the data file, if the system is slow, one ends up with a jerky slow-motion video that often is worse than no video. Yes, there is hardware that will handle the compression/decompression quickly, however, it is very expensive. Another possibility is to purchase Microsoft's "Video for Windows" which stores the compressed video and audio as a AVI (audio/video interleaved) file. The advantage of Video for Windows is that almost any PC that has Windows can access the file using the Media Player (usually found in the group labeled "Accessories.") A note of caution, most video capture cards do not digitize audio. Thus, you will need to connect any audio source to the line in jack of your sound card.

There is one other issue to consider regarding audio and that is MIDI (musical instrument digital interface). While the configuration we described in the first sheet records and plays back audio, it does using a "wave form sound file." (Digitized sounds played by the sound card). MIDI protocol files consist of instructions for creating the sound that go to a synthesizer (for example an electronic keyboard). Needless to say this requires additional hardware and software purchases. We suggest one start using the digitized system for handling sound and later moving into MIDI.

Software Considerations

You will need to consider three types of software -- sound, graphics, and authoring. Each type has two or more variations. For sound, as you might guess from the preceding paragraph, there are waveform editing programs and MIDI sequencers. "TRAX for Windows," from Passport Design, is an example of an MIDI editor package and "Wave for Windows," from Turtle Beach Systems, is a waveform editor. Both of these are relatively easy

packages for beginners to use. There is at least one editing package that incorporates both waveform and MIDI ("MCS Stereo form Animation"). Needless to say it is a rather complex program and takes time to learn to use effectively.

Graphics programs come in three "flavors" - - drawing programs (vector drawing), paint programs (bitmaps), and image editing programs. (Note: vector image files are a series descriptions of the shapes and colors of that make up an image. Vector images because they are based on mathematically defined lines and shapes can be enlarged or changed without becoming jagged. However, they are not good for fine detail or slight color changes. Bitmap images are excellent for gradual color changes making it the best choice for photographs. However, if you enlarge a bitmapped image it becomes very jagged looking because it is made up of individual pixels. High resolution images require lots of disk space. You will encounter three types of graphic file formats - - Bitmap(BMP)/Device-Independent Bitmap (DIB), tagged image file format (TIFF), and PCX. BMP/DIB file handle only monochrome and color images, no gray-scale images. TIFF files handle all types of images but require substantial storage capacity. PCX also handles all images but requires less storage capacity.) "1st Design," from GST Software Products, offers an easy to learn program with both bitmapping and vector capability. "Corel draw!" (Corel Systems Corporation) offers a complex package that also handles both vector and bitmaps as well as an animation capability, but does require time to master. If you have used "PowerPoint" or "Harvard Graphics" which are relatively easy to learn, you have some idea of what to expect when using software like the above.

Authoring software lets you assemble your pictures, video clips, sound files, and text as an interactive presentation. Some packages are built on the slideshow concept (Super Show & Tell) and others on scripting (Tempra Show), while others employ a drag-and-drop concept (Authorware Professional). You can also purchase a variety of "clip media" that are usually copyright free. Films for the Humanities & Sciences has the "BBC Sound Effects Library" - a 40 CD set, including 1500 sound effects - available in 4 sets at \$149.95 ea., or \$549.00 for the complete set. Also, Corel has recently released "Gallery 2" which is mostly photo clip art, but does include 75 sound clips for \$99.00. And finally, another option is Network Music, Inc. (800) 854-2075, a music production company with a broad assortment of sound effects library, classical music and various types of production pieces for licensing and purchase.

We hope you enjoy creating multimedia presentations.

*Prepared by G. Edward Evans for the California Library Association-
Information Technology Section membership. (September 1995)*