VIDEO OVER THE INTERNET

Everything coming out of your computer, whether its coming from the Internet or a software program, is reduced to bits and bytes of information. Whether it's text, still images, audio, and video, it's all streamed information. Audio and video are slightly more complicated than text and still images, so they require more bits and bytes. Until now, this had limited the use of video and audio on the Internet. This is now beginning to change thanks to standardization, compression, and growing bandwidth.

FORMAT Audio and video files, like any other computer files, can be stored in different formats. A song or a news worth sound bite, for instance, can be an .au, .mp3, or .ra file. Each format encodes the same audio information as a different pattern of bits and bytes and each is the brainchild of a different company. Similarly, video (and accompanying sound) can be a .mov, .asf, or .avi file. The latest formats are .ram, offered by Real Networks, and .asf, offered by Microsoft. Each company sells software for creating audio/video files in its favored format. You may be hearing about the latest hot audio format .mp3, which isn't owned by any one company. This means that anyone may write software for it.

PLAYER To play formatted audio and video files, your computer needs a specialized bit of software called a "player." In the old days, you had to download a different player for each audio or video format. Today's players can handle almost all the leading formats. Now you need only install one player, which can play almost any video or audio file. Current versions of the leading software----Real Networks' Real Player and Microsoft's Windows Media Player--may be downloaded for free.

COMPRESSION A full-length music CD contains around 70 minutes of music, which translates into about 640 MB of information in the format used by your CD player. Newer formats used on the Internet compress that same music into fewer megabytes. For example MP3 can store that CD full of music as only 50 MB of compressed data, or around one-twelfth of the uncompressed amount. (The program that turns ordinary sound files into compressed files is called a "ripper.") Transferring a 640-MB file, or 70 minutes of music, using an ordinary 28.8 modem would take around 48 hours. Transferring the same music as an MP3 file takes only four hours, requiring only a few minutes to download a single song. Once you've received an MP3 music file, you can play it on your computer using a player. With special software and a CD writer you can put it on a CD, or transfer it to a specialized Walkman-like device that can be used with headphones or in the car. Restoring the raw or uncompressed file happens automatically.

VIDEO vs AUDIO
Video files are far larger than audio files. Video files contain not only sound but also bits and bytes that tell your computer how to color each of thousands of constantly changing pixels. Even with compression, video of more than about five minutes is still too big for widespread use on the Internet. But as the Internet's data-carrying capacity or bandwidth increases, it's likely that the Net will be the least costly and therefore preferred distributor of movies and TV programs.

STREAMING
Past formats required you to download an entire file before playing it. Newer formats allow you to begin playing the file before the entire thing has been downloaded. Many of the sound and video clips found on Web sites today are purposely of lower quality. The sound is scratchy and the movements are jerky so download time is faster. With less information being transferred, you can stream. This means a minute of sound and or images takes no more than a minute to download and you can listen to and/or watch without waiting or storing the data. Increasing bandwidth will eventually make this compromise obsolete. The free players can be found at