

# What You Get is What You See

With streaming media, pictures or music are played as soon as they are received from any Web site

The 'World Wide Wait' has finally ended. Thanks to the technology called streaming media, you no longer need to hem and haw or twiddle your thumbs while waiting to download an entire multimedia file to your hard disk before viewing it. You can now create, send and receive, and even download audio, video and huge multimedia files over the Internet, intranet or other IP networks, in real-time! The data (audio or video) 'streams' into your computer—it arrives in frames or parts—and is played as soon as it is received from the Web site that you have visited.

### Compressed for timeliness

For any media to be streamed you have to first compress the files. Compressing of the files generally leads to a reduction in the quality. Some of the factors to be considered while compressing a file are the audience—the compression formats they favour and the bandwidth at their disposal.

When building media content for network distribution it is important to know the users you are trying to reach. If the target audience has robust Net connections and plenty of storage space,



### Streaming media is most suited for...

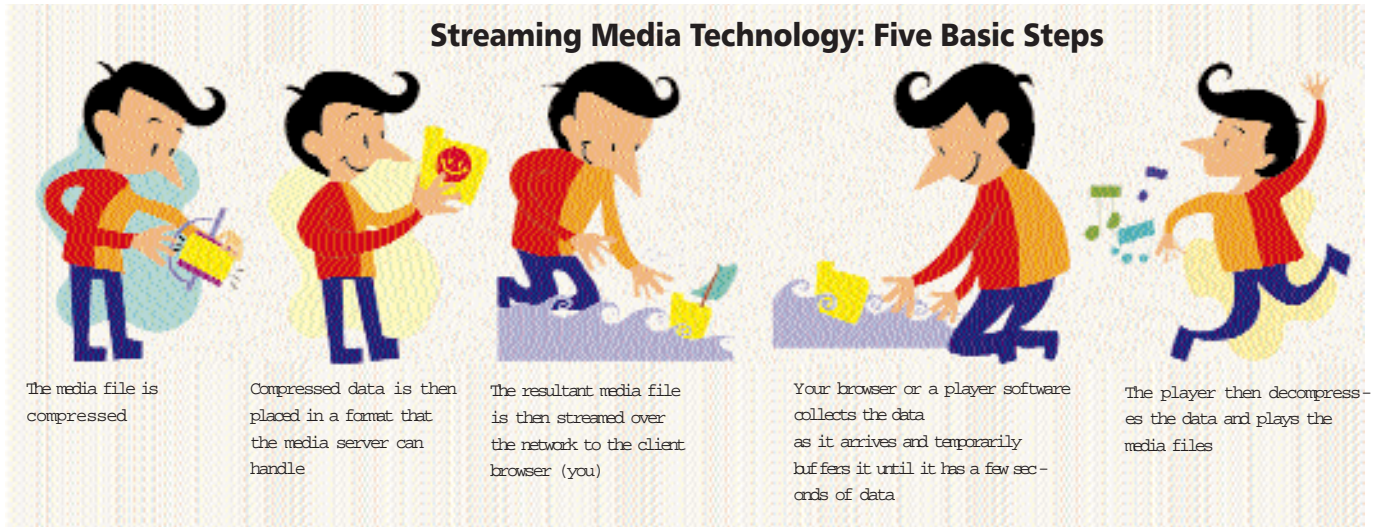
- 1 Live broadcast of events: News, sports, concerts, radio stations, weather and ski reports
- 1 On-demand content: Newspaper clips, recorded radio shows, interviews
- 1 Enhancing instruction: Distance learning, lan-

guage learning, illustrated audio

1 Internet phone and audio conferencing

1 Enhancing Web-based information: Synchronised audio and media

1 Entertainment: Music, audio books, radio programming, movie clips



compression may not be relevant at all. In contrast, if the target audience has low bandwidth access and limited resolution, heavily compressed information may be more appropriate.

Knowing the file formats your audience prefers is also a good idea. Many streaming technologies follow proprietary ‘standards’ for distributing the content. This restricts the content to clients with the right player. Media meant for wide area distribution over the Web will face bandwidth limitations that won’t be present on an intranet.

#### Streaming media on your Web site

If you have some multimedia content that you want to put on your Web site, you should follow these steps:

Gather the content (records, tapes, video, CDs, Laser Disc, Digital Audio Tape (DAT), or live events and convert these into digital files. The process of digitising the media so that it can be understood by your

computer is also called capturing content.

Encode the files into the streaming format. Place the encoded files on the server in a directory from which they can be streamed. The server is set to look in specific directories for streaming media files. Once the files are placed in the proper location and have the correct user permissions they can be accessed from a Web page.

The streaming services use pointers or reference files to initiate a stream. In a Web page, a standard hyperlink is used to link to the pointer file. The pointer file contains the information that triggers the streaming server and tells it where to find the encoded files. If everything is set up correctly, the client will start to view the streaming file.

#### Finding the right components

To experience streaming media you must have the appropriate plug-in. Several companies and products have developed streaming technology. To understand the requirements of streaming media, one must know about types of streaming media, encoding, playing media, serving media and protocols.

You can use two types of files for streaming media—stored files, and the live broadcasts of events. In addition, there are closely related types of media such as pseudo-streaming media (Apple QuickTime, Microsoft ActiveMovie) and MIDI-streaming applications.

Whether or not the user has a control over the encoding process depends on the encoder. Again, here you have to strike a balance between compression

and quality. The higher the quality you want, the higher the sampling rate required during encoding, and the larger the resulting file.

#### Fixing upon a format

Most encoders accept source files in a variety of formats—wav, au, snd, and pcm formats are acceptable to most. Some encoders accept only those files that have been recorded at specific sampling rates. For example, the RealAudio encoder accepts source files recorded at various sampling rates up to 44.1 KHz.

Vendors that have their own encoder, also have a player that will play the sound encoded in their proprietary format. Players give the user control over the incoming streaming audio and can be of two types: Helper applications that launch automatically when the browser detects the file type or browser plug-ins that enable a Web designer to decide how (if at all) the player interface is to be displayed.

To create and play sounds with the products of some vendors, the encoder and player are all you need. You just have to link to a media file on a Web server and the file begins to download and play. However, certain vendors like RealAudio, Streamworks, Netscape, and VDOLive require that you install a server. The server generally costs more and requires more work but enables stream management such as control over the number of audio streams that can play simultaneously, the quality of the streams, or reports of who is requesting streams.

#### Big names in streaming media

Company	Software
Real Networks	RealPlayer
Macromedia	Shockwave
Microsoft	NetShow
Microsoft	ActiveMovie Player
VXtreme	Web Theater
Xing	StreamWorks
InterVu	InterVu
Apple	QuickTime
VDOnet Corporation	VDOLive
Vivo	VivoActive
Vocaic	MediaSuite

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