

Nemesis: Multimedia Information Delivery

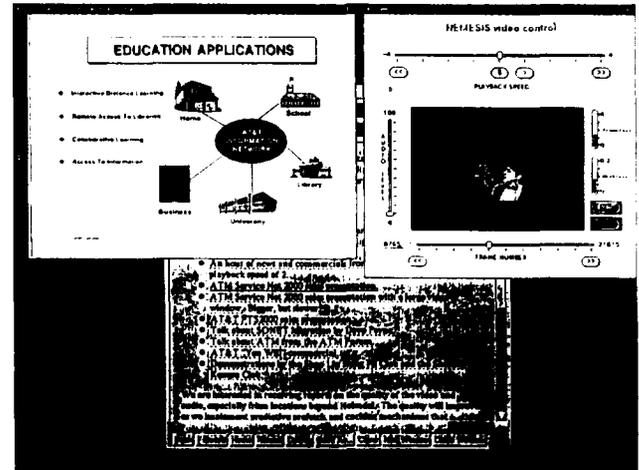
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Critical to the success of future multimedia services is the ability to provide fast access to stored information via communications networks. In the *Nemesis* project, we focus on application control protocols for delivering stored multimedia to a user. We are exploring adaptive rate control strategies for networks of variable bandwidths and predictive prefetch of information from remote storage servers as a strategy for coping with short-term network congestion. We also provide "better than being there" features such as variable playback rates with intelligible audio and synchronization and linkage of multiple media.

Our first prototype combines the Nemesis service with the NCSA Mosaic graphical information navigation tool to give access to corporate information in a variety of media, including text, image, sound and multimedia. The multimedia database contains talks and presentations given at AT&T, including accompanying documents and viewgraphs. Because talks are given at specific times and places, people often miss them either due to conflicts or because travel is too time-consuming and expensive. The Nemesis service provides for on-line archival storage and delayed, remote viewing of presentations. A key feature of Nemesis is the integration of other media with audio and video. For example, for auditorium talks Nemesis presents a separate window with the viewgraphs being used by the speaker.

We plan to make the data stored in Nemesis available on a wide variety of platforms ranging from workstations and personal computers lacking decompression hardware to multimedia workstations capable of displaying full-motion video streams. Additionally, the data can be accessed over networks with a range of capabilities such as ISDN, Ethernet, and ATM networks. The first prototype uses Sun SPARCstations for display, software decompression of JPEG-encoded video, and a nationwide corporate TCP/IP network.



NEMESIS video control

