

## VIDEOTEX TELETRAFFIC IMPLICATIONS

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### ABSTRACT

Services such as videotex, facsimile, teletex and teleconferencing have been developed to meet business and social communication needs and will contribute a growing proportion of network traffic. The paper discusses the teletraffic issues which apply to the design of public and private videotex systems.

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Videotex is the modern method of communicating textual and graphical image information via the telephone network. It can bring worthwhile benefits in business, domestic and social applications. It is in use in 40 countries and the numbers of installations and users are growing rapidly.

Videotex will play an important part in the highly advanced information society. When videotex is frequently used as a transmission medium controlling goods and money flow, it will play a significant role in the socioeconomic activities of the modern world.

On the domestic scene, fast growth areas using videotex include electronic banking and shopping and down-line loading of programs into personal computers. In business and commerce, Closed User Groups represent the main market with significant use also occurring in electronic mail and data entry by third parties.

A turning point has been reached with the establishment of public videotex services by the Telecommunications Administrations in many countries. These serve a dual purpose: (i) a videotex service usable by anyone with access to a telephone; and (ii) a gateway to access videotex systems provided by private operators (Fig. 1).

A benefit to the users is that the cost of access is kept very low, and is often independent of the distance between the user and the videotex centre. Gateways serve important functions -

- They give private system operators indexes to their services on the public videotex system.
- They enable end users to switch easily between different private videotex systems without redialling.
- They allow short bursts of heavy traffic to be buffered.
- They offer a mechanism for centralised user billing.

The networking flexibility of videotex systems is one of their main advantages over conventional transaction-processing computer systems. Private videotex systems can be accessed over public and private telephone networks, over private and public data networks and over special videotex networks and gateways, both on a local and international basis.

The traffic characteristics of videotex "calls" need to be known in order to correctly dimension switching exchanges, multiplexors and transmission paths. From a system operator perspective, it is necessary to know how much traffic a central processor can handle at acceptable grades of service. An asset in handling this problem is that the system itself can maintain a statistical log of user sessions. In fact, a source of attraction to information providers and advertisers is the detailed market research which can be carried out via a videotex medium. This is possible by mapping the log of user sessions against user demographic profiles.

The economic viability of a videotex service is influenced by many factors, but the principle ones are -

- Ease of access and grade of service.
- Quantity and quality of information.
- The relative cost compared to obtaining the desired information from other sources.
- Cost and versatility of terminal services.

It may be observed that these factors, or similar ones, apply to various other products and services provided by telecommunications administrations.

Accordingly, the design of a videotex system, be it public or private, needs to take full account of the teletraffic issues. The data to be presented are recent figures from the Telecom Australia videotex service, VIATEL, and national videotex services provided by several large private operators.

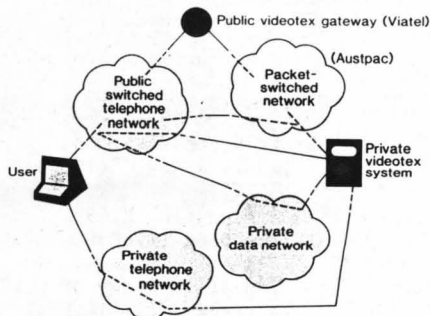


Fig. 1 Alternative Network Options