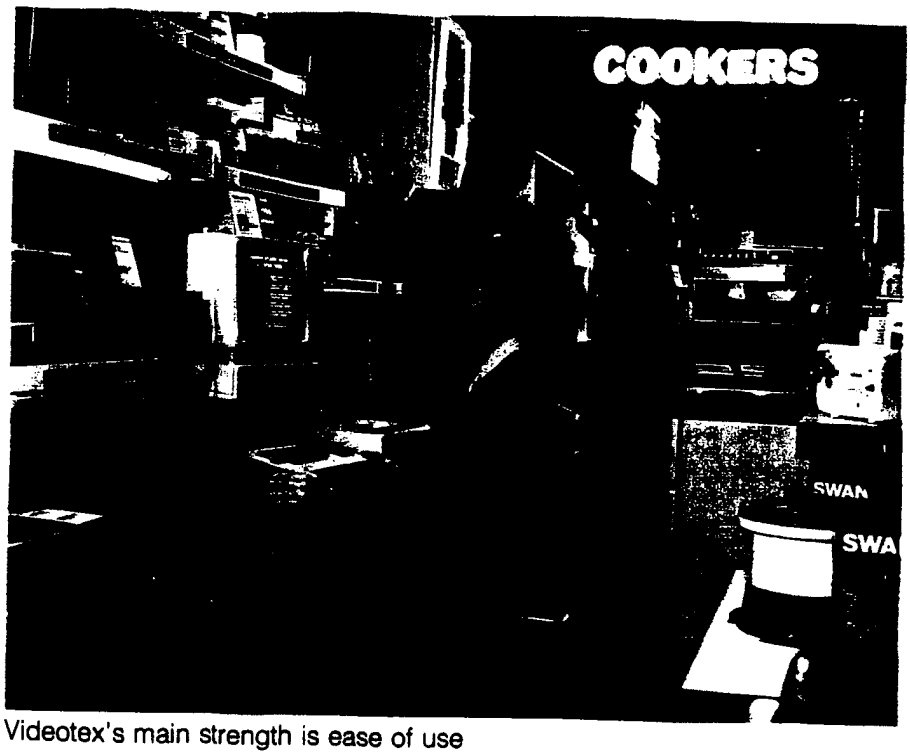
PRESS ANNOUNCEMENT

M. J. ALDRICH

PRESS CUTTINGS

JANUARY 1989

Jim Costello discovers that videotex is booming in the private sector and explains why it has succeeded when the public services failed.



Videotex's main strength is ease of use

Videotex: the private way to publicity and success

At the Open Systems World conference last November, Oasis chairman Dr Robb Wilmot chose videotex as an example of a technology that never achieved the critical mass needed for commercial success.

It was fair comment insofar as the public systems did not attract customers as anticipated and the technology was overtaken by the advent of the microcomputer, but the goose looks to have laid a golden egg in the shape of private videotex systems.

The International Telecommunication Union's (ITU) generic expression videotex describes tv equipment used to display computer-based data. Where the information reaches the set via a telephone, it is known as viewdata; if via a broadcasting channel, it is called data broadcasting, namely Ceefax and Oracle, or teletext. A UK invention, videotex links the three primary media of computer, standard telephone line and colour television.

In the 1970s a commercial race took place between the BBC, using airwaves, and the GPO using spare telephone line capacity, to deliver text-based services into the home. The BBC's Teletext service proved to be cheaper, not incurring telephone charges and having the support of tv manufacturers. After a few lean years, however, came GPO's liberalisation and eventual privatisation. British Telecom's videotex service, Prestel, then concentrated on the business environment, offering public and private services fed either by Prestel itself or through hundreds of independent organisations called information providers such as British Rail and finance data specialist ICV.

Private Prestel-lookalike videotex systems emerged in the early 1980s complete with dedicated terminals. Over the last five years, the technology has culminated in corporate systems, sometimes called super videotex, with terminals that carry out a range of functions not only within an organisation but often with parties who benefit from the having the data on-line such as clients or suppliers.

Corporate videotex was first aimed at a sector where a competitive edge could be gained by better manipulation of common knowledge — holiday tour companies. The early 1980s' recession meant expansion depended on grabbing a larger slice of a stagnant pie and videotex was seen as a possible weapon. Thomson Holidays installed a pilot system of what became its Thomson Open-Line Programme in 1982 and subsequently grabbed a further 5% of the market, by being able to confirm bookings on the spot. Rivals had to embrace videotex or face extinction.

The success of a British Leyland videotex system enabling dealers to show customers exact stocks and locations of cars initiated an industry market war with videotex as a front line weapon. Nissan began arranging finance and, most recently, insurance for cars through videotex, closely followed by the other large manufacturers. 'The technology was not clever or unique, it was just around at the time,' recalled Michael Aldrich, chairman of ROCC, which

supplies bespoke videotex systems.

'The essence of what we, as Redifussion, saw back in 1980 would become a transforming competitive weapon, was a discontinuous on-line service delivered through non-technical devices to non-technical people,' said Aldrich. The simplicity of operation of a corporate videotex system, even when linked as a front end to complex real-time applications and databases, is an essential factor in its growing acceptance. Anyone capable of absorbing a tabloid newspaper can operate a videotex system without training.

Videotex information is held in a database containing alpha-numeric and graphical data. The information is usually presented in the form of pages that the user calls to the screen from a menu. Corporate systems can integrate the videotex data with other in-house applications such as word processing and can provide functions normally associated with computers, such as real-time updating of stocks and sales orders.

An internal or external telephone lines — PSTN, vans or leased lines — is the most popular delivery medium, followed by tv broadcasting channels. The potential exists for satellite communication, restricted primarily by the search for standards.

A system running bespoke software can fall prey to spiralling development costs

A driving force in the corporate market is the development of videotex front ends that offer a hardware and software interface to existing computer information and on-line databases. The processor must be able to send and receive data to and from a mainframe, for example, manipulate the information on its own database and that of the host at the same time as offering the same service to a front end videotex terminal.

Attaching a videotex front end to a mainframe will involve re-writing the teleprocessing system to some extent. Whether for an off-the-shelf or bespoke package, an IBM machine, for example, needs CICS or IMS as an interface. While the initial cost of a packaged solution will be less daunting, the resulting need for modification and restrictions imposed by mainframe upgrades tend to leave such a videotex system simply displaying unmodified mainframe data on a tv-style terminal. A system running bespoke software can fall prey to spiralling devleopment costs.

Alternatively, a standalone videotex system is generally built around a multi-user supermini using a videotex operation system running specialised application tools. Frequently, a standalone is considered when introducing a new service or system and incorporates performance monitoring and development tools. For the task they perform, they are generally good value, but there is a trade-off against the flexibility of an integrated system.

A third option is the so-called 'alias' system which enables a videotex terminal connected to a mainframe to act as if it were native to that mainframe. The alias collects information from the host as if it

for onward processing. Problems associated with tv reception, such as ghosting and adverse weather conditions, naturally beset data broadcasting. The cost of the initial licence fee from the IBA or BBC is heavy, making it viable only for organisations with hundreds rather then tens of branches.

The installation of real-time videotex in high street shops for both retailers and customers is the aim of an application of existing videotex technology called Extel Visionlink, announced last May and currently undergoing trials at a sports outfitters in London's Oxford Street. The flexibility and interactive quality of videotex presentation could revolutionise in-store product information and advertising, currently limited to posters, point of sale leaflets and the occasional video screen.

Up to now, over 4,000 betting shops receive up-to-the-second racetrack details on videotex screens, for example, via a combination of BT, Mercury and private digital lines known as Extelnet, one of the largest managed private networks serving some 15,000 users in the UK and Eire, with links the US through AT&T/Mercury. Visionlink seeks to extend Extel's traditional bookmaking and financial information on videotex to the retail trade.

Typically, Visionlink will comprise Extel's central site which generates text, graphics and control information for shop terminals capable of driving up to 16 screens and a maximum of 250 pages held in memory. A prominent feature of the system is the graphic capability, based on NAPLP syntax enabling the visual data to be encoded in a standard and compact fashion. Visionlink uses a customised version of the MGE graphics package from Canadian software house Microstar, running on Westinghouse monitors and shop controllers with Electrohome direct drive modules and central control software.

The flexibility and interactive quality of videotex could revolutionise in-store information and advertising

The NAPLP system gives a screen resolution of 250×512 pixels and a palette of 4,000 colours compared with teletext screens providing a 72×80 pixel resolution and eight colours including black and white. A page of high quality graphics can be sent over the network in less than four seconds due to the compacting facility. Shop chains, following in the footsteps of the betting giants, can, for example, 'watermark' the pages, showing their logos behind on-screen descriptions of goods.

'The system has to be capable of constant communications from the centre to multiple sites delivered by land line, data broadcast or satellite, including groupings of sites, such as all outlets of company X in Sussex, while the text and graphics have to be capable of being personalised,' said manager Nick Jones.

There are plans to increase memory size to over 1,000 pages for each controller through shrinking the text size on screen, accommodating whole training manuals or more extensive stock lists, and private screen can be designated to particular terminals providing a form of

electronic mail systems.

The system is intended for information broadcast from a central site, but two-way connection is possible via a micro and modem link enabling on-screen stock-taking, for example. Text from the control centre or store terminals can also overwrite in-store video presentations and tv channel output.

Jones forsees Visionlink including data broadcasting — Extel has a fixed line into the IBA's Aircall — including satellite broadcast: 'A network is the preferred delivery method but we do not preclude datacast if it can be improved to our level of satisfaction.'

Extel aims to act as both an information consultancy and bureau, creating pages to order for its clients complete with graphic designers, eventually handing over page creation after a period of time if desired.

Visionlink represents a multi-million pound investment and four years of r&d by Extel and has evolved from the consolidation of the bookmaking industry in the early 1980s when profit margins grew tighter. 'This is not Star Trek technology but a proven system, though it can be taken a great deal further if required. The market is just reaching the stage of understanding where it can go with videotex,' said Extel managing director Stuart Hall.

Terminals now offer multi-function pc capabilities and high quality graphics with van connections

Extel is negotiating with three other parties capable of providing a gateway to and from Visionlink, the natural candidates being van and vad suppliers such as INS and Istel as a logical extension to EDI. 'By the time the technology is established in the UK, such questions will be resolved. Toward the end of the 1989 we will see retailers taking it up,' added Hall.

The videotex phenomenon that was overtaken by microcomputers has evolved to become a complementary technology for the private sector. Terminals now offer multi-function pc capabilities and high quality graphics with van connection for economic long-distance corporate-wide dissemination of current data normally confined to hard copy, such as telephone directories and stock lists.

Whether as an executive information system linked to incorporate databases or staff notice board, its emphasis is ease of use belying any complex interface with a computer base, performing a separate set of functions from orthodox data processing.

The DP department's wariness of videotex as either a toy or a threat can perhaps now be set aside. □

were an ordinary terminal, reformats the data and presents it as videotex on the videotex terminal.

The alias can include a multiplexing, network control packet-switching system that operates within the telecommunications distribution network and reformats the messages. Alternatively it may comprise an ersatz front end processor able to process the data itself.

Installation of an alias takes up less time than other systems and, most importantly, open up the computer's database for use in customer-related applications. For Thomson Holidays this meant saving money previously paid to staff to look up travel details and relay them to the agents. The work is done by individual travel agents who have paid Thomson to join the system.

State-of-the-art in private videotex is essentially a highly sophisticated combination of the standalone and alias systems. This synergistic system can handle tens of videotex ports concurrently and allow each terminal on each port to plunder data from up to eight host computers with distributed databases. The information can then be manipulated and represented to the user who can be unaware that the videotex terminal is attached to more than one system.

'The average pc screen is not so much for communication but administration. The videotex screen, though, is there to sell something. Computer people can perform finance house applications but the videotex provider thinks of the person he is selling to — it's a point of sale device,' explained Aldrich. A point emphasised by the fact that the original screen representation was designed by an advertising agency, not a team of engineers. 'Technologically, though, they are coming together with the photographic quality of some workstations, for instance,' he added.

Videotex demands its own operating system. Suppliers and large users tend to create their own, given the peculiar qualities of the medium. 'Computers hate to be hit by slow asynchronous character-driven terminals designed to work on the PSTN at 1200 Baud/s. A mainframe will go bananas with frustration — like an F18 fighter trying to shoot down a biplane,' said Aldrich.

The solution lies in dedicated communications controllers, effectively a series of microcomputers, providing interactive links to the mainframes or into a van. The aggregated processing power for a 40 port system is around 9 mips with a 33Mbyte or 66Mbyte virtual engine and 2Mbyte operating system.

This ROCC Teleputer terminal opens up information banks to Hounslow residents

Features of the software include the ability to handle multi-user, multi-task front and back and communications, multi-level security, dynamic and static pages, keyword searches, data entry validation and insert, delete and retrieval functions among others, all transparent to the videotex terminal user.

In many ways the exploitation of videotex has been hindered by its history. Users have been waiting for the industry fragments — tv and chip makers, computer manufacturers, information providers and the network providers — to appreciate the advantages that the gestalt, in the shape of videotex, could offer. 'It has the leverage of offering information to competitive advantage at time when other technologies, such as workstations, are coming to fruition, and effectively putting staff, agents and distributors on to corporate computers,' continued ROCC's Aldrich.

UK industry standards are making headway. The suppliers' forum, the Videotex Industry Association struggled for years to be heard by British Telecom, the Department of Trade and Industry's preferred choice to carry out standards work. Privisation brought BT both a fee for its services from the DTI and a change in attitude, described as 'leading the charge but listening to the troops'. A VIA special interest group has been set up to lobby standards makers from the industry point of view. Internationally, the task was said by one major supplier to be 'dreadful' due to the vested interests of individual countries.

'Telephones and broadcasting are the most intensely regulated services and the make up the most powerful monpolies for services and equipment throughout Europe. 1993 won't change that,' according to Aldrich, adding that videotex will probably submerge into some other form, capable of distribution by vads and vans but still a communications medium for non-technical users be they clerks or management.

Graphics presentation on videotex can be divided into three main types depending on the ability to represent curves on screen. Alpha mosaic is the simplest form, such as the chunky pictures of Prestel. The UK, West Germany and France have agreed on the CEPT videotex standard for alpha mosaics.

Alpha geometric graphics, such as the North American Presentation Level Protocol (NAPLP), offer true curves on screen, while alpha photographic presents photograph-quality pictures on videotex.

While private viewdata systems running across networks are becoming established corporate information tools, the VIA describes data broadcasting or teletext as 'the emergent technology in the videotex arena' in which data is inserted into empty slots in tv picture transmission known as 'vertical blanking intervals'. Private broadcast videotex (PVB) is, in effect, a closed user group teletext service on the lines of Ceefax and Oracle but with enhanced facilities.

The first applications of PVB include Ladbroke's, Reuters and Marks & Spencer, offering instantaneous, simple communication between a head office and its branches, for example. Currently land-based, PVB will eventually include satellite transmissions; tv receivers connected to a pc can download data instantaneously into a database or network

Automatic Signature Verification

Even though each credit card transaction needs the signature of the person using the card, fraud cost VISA USA $130 million during 1985.

This happens because the signature verification is done by people, who get tired and fed up examining several hundred true signatures on the off-chance that they might detect a forgery. Having a machine perform the task would mean that signature authentication could be made automatic and reliable — which would in itself reduce fraud based on forged signatures. A new signature verification machine called DigiScan is claimed to provide that facility.

DigiScan is a simple, inexpensive, self-contained system that differentiates between true and false signatures. It is

a result of eight years of research and development in the field of pattern recognition.

Michael Aldrich is the chief executive of ROCC Pattern Recognition Ltd, who produce DigiScan. He says 'For all practical purposes, signatures can now be electronically verified for personal identification and authentication. Fraud perpetrated directly through, or aided by signature forgery, can be reduced to insignificant proportions at an economic cost.

'ROCC's signature verification technology, implemented in DigiScan, can be considered to be around 95% accurate for general use, and over 99% accurate in dealing with forgeries where the forger has not seen the true signature.'

DigiScan technology works by deriving a numerical code from a minimum of six sample signatures. The numerical code is then either printed alongside the signature box on a cheque or encoded in the magnetic stripe on a plastic credit or identification card.

A comparison between the written signature and the numeric code by DigiScan indicates whether the signature is acceptable. The comparison takes three seconds. The basic DigiScan unit is self-contained, tamper-proof, and need not be connected to any other electronic device or network. Nor can the numeric values be used to create acceptable signatures.

Independent tests of DigiScan, carried out by internationally recognised academics, indicate stable and consistent performance that establishes new world standards in authentication techniques, according to the company.

The test results were consistently achieved over a continuous, uninterrupted six-week period using a DigiScan system with a fixed decision threshold value. The system can use variable thresholds, according to client and application requirements.

The technology will be licensed to other equipment manufacturers for use in their own products, such as point of sale terminals and cheque and item processing systems encoders, or it can be acquired as a product similar to the demonstrator system. This system would cost around $400 to $500 per unit in mass production.

Those who want to know more about DigiScan should ring Michael Aldrich of ROCC Pattern Recognition Ltd on (0293) 31211.

ROCC Pattern Recognition Ltd has signed a licensing agreement with Cheque Alert Inc (based in New York) for a low-cost signature verification system. The new product, shown here, automatically differentiates between true and false signatures.