

# ROCC

PRESS INFORMATION

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PRESS CUTTINGS

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# Videotex – boom or bust?

"Despite some spectacular market success, notably in the travel and motor industries, and despite the rosy forecasts of the market researchers that all point to a multi-million pound market, the sceptics will say that the jury is still out on videotex. Is videotex just a passing phenomenon that will be absorbed into the more traditional world of data processing networks and lose its identity, or is it a revolutionary communications medium in its own right that will have a major impact on the way people do business?" So asks Mike Aldrich, chief executive of ROCC Computers, and a leading spokesman of the pro-Videotex bench.

But Aldrich's initial premise is no longer sound. "Videotex as we know it today," says a new report from the US market research company IRD Inc, "will have virtually disappeared within the coming decade." But which view is correct? Aldrich cites the holiday tours industry as the first to take advantage of videotex ("a competitive field enormously dependent on marginality — the last few rooms sold and the last few seats filled make the difference between profit and loss").

## Continuing trend

"The next area to follow suit," he continues, "was motor retailing, and the trend continues with the insurance industry emerging as the next battleground. Financial services are on the starting grid, and now mainstream manufacturing is being persuaded of the value of videotex. In the background, pharmaceuticals and tobacco are already limbering up, and agricultural chemicals are smouldering. Where there is competition, increasingly there will be videotex." And the reason, he says, is simple. "Videotex puts the customer on-line to the supplier. It creates a new communications medium that is more effective than any other currently existing."

'Currently existing' is perhaps the key point in Aldrich's thinking. However, the IRD report comments, "Emerging microcomputer image processing and transmission technologies, combined with new output and storage devices, will soon change the face of business Videotex... These technologies, driven by an increasingly sophisticated user population, will use high-speed microprocessors and megabytes of RAM to erase the barriers now separating videotex, on-line database and worldwide integrated communications networks."

Aldrich agrees that certain computer technologies are merging. "Efforts are being made," he says, "to harmonise videotex and teletex protocol specifications so that messages can be moved from one convention to the other, with tremendous benefits for business in

Data Line's Kevin Townsend looks at the Videotex market with Mike Aldrich, Managing Director, ROCC Computers.

terms of faster, more efficient communications." But he doesn't believe that 'Ease-of-use' is a wasting asset. "Videotex," he exclaims, has big advantages for the end user. For the first time multiple, sophisticated, interactive computer applications can be assessed from a device that demands no special computing skills."

The IRD report takes an almost opposite viewpoint. Videotex, it says, "may be seen as a traditional method with which a computer-illiterate population learns how to use computers... In essence, the only use of videotex would be to allow naive users to have quick access to the needed information, and conduct simple transactions." From this point, it suggests, "as the population becomes more familiar with computers, they may demand more interactive and detailed information services than videotex's limited format can provide."

So, what are the hardware advances that will weaken the current advantages of videotex? Many of them are already visible — such as the change of emphasis from corporate mainframe to corporate microcomputing. Today, the PC is recognised as the focus of future office automation, and has already become the videotex terminal for most business users. But Microcomputing is on the verge of radical evolution if not revolution. Already the new generation of microprocessors gives desktop machines the power available only to mainframes just a few years ago. New high resolution bit-mapped colour monitors can display visual images far superior to the capabilities of videotex software. High resolution fast laser printers can produce printed output to original blue-print quality, while, says the report, "Philips, Matsushita, Toshiba and many other vendors have demonstrated working optical disc systems that

store images using digital compression techniques to reduce the number of bits required to store a page by a factor of 22."

All of these hardware capabilities will be wasted on current videotex software, but could be used to great effect by more traditional computer graphics systems. The problem with the transmission of high resolution graphics has historically been the constraint of the transmission media, which do not contain sufficient bandwidth to handle high-res displays. However, new moves in optical fibre networks will allow both high resolution imaging and integration with other networks for the transmission of voice, data, and video simultaneously. "These trends," says the IRD report, "point to a lessening distinction between what is referred to as 'videotex', and what may be viewed as information or database retrieval systems, and, in the future, between integrated communications networks."

## Many applications

But the main difference between the IRD report and Aldrich's views is that the former talks of future likelihoods, while the latter discusses current trends. "Videotex," says Aldrich, "may be only a small step forward for computing, but it is a giant leap forward for communications." As a general communication medium, he goes on, videotex has many corporate applications. Typical terminal uses include management workstations, organisation notice boards, clerical workstations and computer-assisted learning stations. These uses generally displace prior methods to give tangible economic benefit. The participatory communication provided is generally most suited to transactional service, messaging, information dissemination, or educational applications.

But it would be wrong to suggest that Aldrich thinks the future is all plain sailing for videotex suppliers. "It has been a feature of most in-house videotex projects to date," he says, "that they have been driven by strategic corporate management. Data processing departments have remained aloof. They have been unable to decide whether videotex is a toy or a threat, and they have been unable to understand that a new communication medium is a major opportunity. Thus they have been reluctant to move into videotex and others have seized the initiative."

It can be expected that DP departments will continue to resist. Their argument — that videotex is just another VDU — is still heard. But Aldrich believes that the new developments in videotex will obliterate that argument forever. There can be little doubt that videotex is a major worldwide phenomenon," he concludes.



*The videotex time-bomb*

# VIDEOTEX POISED FOR BREAKTHROUGH

By MIKE ALDRICH, *Chief Executive, ROCC Computers*

Despite some spectacular market success, notably in the travel and motor industries, and despite the rosy forecasts of the market researchers that all point to a multimillion pound market, the sceptics will say that the jury is out on videotex. Is videotex just a passing phenomenon that will be absorbed into the more traditional world of data processing networks and lose its identity, or is it a revolutionary communications medium in its own right that will impact the way people do business?

③ The confused and confusing signals that reverberate around the market relative to videotex have something to do with the correlation of videotex with public service videotex. The technology, linking modified TV sets to computers, was, after all, invented by the British Post Office and is enshrined in Prestel and everyone knows that Prestel has not had the huge domestic success forecast for it. But it also has something to do with vested interests and the NIH (Not Invented Here) factor. As a British invention with the potential to reduce dramatically the costs of implementing an effective data communications network, videotex was viewed with some suspicion by some of the more dominant vested interests in the computer business more anxious to promote the merits of conventional networks than respond to the real needs of the marketplace.

In reality Prestel is, indeed, videotex, but videotex is not Prestel: there is a large and rapidly growing market for private, or corporate videotex systems and these systems are developing as a distinct and novel solution to some age-old business communications problems. There are today three generic types of videotex system — public service videotex, such as Prestel; private systems that are lookalikes of public systems, known as PLAK systems; and super-videotex systems for private usage. This paper considers the last two types of system.

In the context of this paper the term 'private' is used to differentiate corporate systems from public systems. This does not mean that the videotex terminals used on a private system are all installed within an organisation. The terminals may well be installed with the agents, distributors, clients, suppliers, customers, personnel agencies and other groups who need to communicate with an organisation.

As a communications medium, videotex has three elements. Firstly, there is the provision of information that is structured within some kind of database. The database can contain alphabetic, numerical, and graphical information, in virtually any volume, and with super-videotex, organised in any suitable manner. Secondly, there is the distribution channel which is generally an internal or external telephone line (PSTN, PSS or leased line). Lastly, there is a human interface device with send, receive and local storage capability (the videotex terminal).

In the world of videotex, there are three technical conventions for handling alphabetic, numeric and graphical information. The first is alpha-mosaic, pioneered by Prestel and, later, Antiope and now standardised into the European CEPT standard. The second is alpha-geometric now formalised as the AT&T presentation level protocol. The third is alpha-photographic which again has been pioneered by Prestel as Picture Prestel. The conventions are complementary rather than competitive and, with a little goodwill and cooperation, may one day be enshrined as a composite, compatible multi-level convention. The main difference between the levels is the enhanced handling of non-alphanumeric information. Most of the practical experience with videotex has been had with alpha-mosaic systems and the bulk of that experience is UK-based, or UK-supplier based.

There are today more private videotex systems installed in the UK than public systems, although there are more terminals connected to public systems than to private systems. The growth of private videotex has taken place in the last five years. The first private videotex system was launched in March 1980 — by Rediffusion — and headlined as a system that 'would impact trading position'. Needless to say, there were a few people who thought it was somewhat arrogant to make such a claim. By 1981, however, the great videotex wars had begun.

Astute business people saw videotex as a weapon that could be used against their competitors. Their logic flowed in this way: the general business economy was depressed and likely to remain so for some time; the only way to grow was to increase share in fairly static markets; market share could only be increased at the expense of competitors; displacement of competitors could only be achieved by new products (in short

## WANGNET AND WANGNETFASTLAN

SERVICE	TOPOLOGY	TRANSMISSION MEDIUM	TRANSMISSION METHOD	NETWORK-ACCESS METHOD	INTERFACE/PROTOCOLS	TRANSMISSION SPEED	MULTIVENDOR COMPATIBILITY
WANG Systems Services (WANG Band)	Bus	Dual Cable	Broadband (RF)	CSMA/CD	WANG	10 Mbps	
Peripheral Attachment Service (Peripheral Band)	Bus	Dual Cable	Broadband (RF)	Polled	WANG; IBM 3270	4.27 Mbps	Yes
Interconnect Service (Interconnect Band)	Bus	Dual Cable	Broadband (RF)	FDM/CSMA	RS-232-C (V.24); RS-366 (V.25); RS-499 (V.35)	1,200 - 64,000 bps	Yes
Utility Band	Bus	Dual Cable	Broadband (RF)	CATV	Video		Yes
Professional Computer Service	Token Bus	Dual Cable	Broadband (RF)	Modified Token Passing	WANG	2.5 Mbps	

their processors, the Peripheral Attachment Service can be used to connect IBM 3270 Type A devices to their host systems. The Interconnect Service offers 336 channels over which both Wang and non-Wang equipment using industry-standard interfaces (RS-232/V.24, RS-366/V.25, or RS-449/V.35) can communicate at speeds up to 64 kbps. The WangNet SIMS operates on the Interconnect Service.

As part of its commitment to openness, Wang intends to continue to incorporate both industry-standards and de facto communications services on WangNet. Because less than 65 per cent of WangNet's total bandwidth is being used currently, Wang will be able to support these services without affecting WangNet's current capabilities.

**PABX Vendor Programme.** To effectively develop a twisted-pair/PABX transport architecture, Wang has created a four-level PABX compatibility strategy. Level one of this strategy consists of three elements: RS-232-C or comparable international on-premises connectivity with leading PABXs, high-speed multiplexed interfaces for connecting multiple devices from a PABX to the Wang VS over a single twisted-pair wire, and a PABX-to-WangNet gateway. At level two, Wang and select PABX vendors jointly will develop value-added features, such as keyboard dialing.

At level three, Wang will work with a small number of PABX vendors to physically integrate Wang hardware and software with the vendors' switches. At level four, Wang has developed a strategic affiliation with InteCom, Inc., of Dallas, Texas, for jointly developing and marketing products, particularly integrated voice and data systems. Wang presently owns 20 per cent of InteCom, and the two companies have exhibited a prototype of a jointly developed integrated voice and data workstation that will work in conjunction with InteCom's IBX. The four-level strategy allows Wang to take a leadership role in the integration of voice, image, and data in its information solutions.

Wang currently has agreements with AT&T Information Systems, Northern Telecom, GTE Communication Systems, InteCom, Jistel (Jeumont-Schneider of America), Mitel, ROLM, Siemens, SONECOR, Jeumont-Schneider (France) and STK (ITT Norway) to establish basic connectivity and provide a multiplexed interface between Wang products and the vendors' PABXs (level one).

### MICRO COMMS SYSTEM

The product comprises a fully integrated modem and software set, with all necessary cabling and full documentation, and is compatible with personal computers running under PC-DOS, MS/DOS, CP/M 80 and CP/M 86. Based on a special version of Datatech's VX Series of personal computer modems and Sagesoft's CHIT-CHAT communications software program, it features a proprietary protocol allowing full file transfer between personal computers. The modem is a full auto-dial, auto-answer device which communicates at 300 bit/ and 7511,200 bits full duplex and 1,200

bits half duplex, and is controlled through the keyboard of the host personal computer.

The software, which has been fully integrated with the Datatech modem, is a program with a wide range of operating features tailored for the business communications environment. They include a built-in text editor with search and replace facilities, which aids in particular the off-line preparation of electronic mail messages for transmission almost anywhere in the world.

THORN EMI Datatech Limited,  
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supply), a price war (which no-one wanted) or a new way of doing business (which no-one wanted) or a new way of doing business (which no-one could easily emulate). With videotex they found, and are still finding, a new way of doing business.

The first industry to succumb was the holiday tours business. It is frighteningly competitive business enormously dependent on marginality – the last few rooms sold and the last few aeroplane seats filled. The largest operator decided to put all the agents on-line for reservations and confirmations of bookings using videotex. The rest is history. The larger competitors decided to follow. The smaller companies lost out badly. The dominant company increased market share and profitability. It was the first clear example of the new information technology being used as a direct, overt competitive weapon. In the past, technology had been used as a competitive weapon only in specialised industries – pharmaceuticals, chemicals, semiconductors and the like. Here it was being used by a service industry.

The next thing to go was the motor industry. The motor manufacturers were finding it difficult to sell vehicles. Competition was intense. They decided to put their dealers on-line with videotex. These systems allow customers to locate a vehicle anywhere in the UK to their specification and allow the dealer to 'adopt' or order it. Most cars to most configurations can be delivered to customers in a few days. Waiting lists are now generally a thing of the past.

So it continues. The insurance industry is the next battleground. Pharmaceuticals and tobacco are limbering up. Financial services are on the starting grid. Agricultural chemicals are smouldering. Semiconductors are well on the way. Where there is competition, increasingly there will be videotex. Even consumer durables are in on the videotex action. The reason is simple. Videotex puts the customer on-line to the supplier. It creates a new communications medium that is more effective than any other currently existing. Videotex makes business sense. There is a further advantage. If in providing the customer with the wherewithal to communicate directly to the corporate database base, the customer can thus enter orders, check deliveries, control own credit limits, browse through catalogues and send messages to the organisation, that part of the organisation's resources hitherto devoted to providing those services is no longer needed.

In the past, whole industries have been changed because of movement in their operating cost profiles. The externalisation of office labour cost through videotex is a totally new phenomenon, and will have a more dramatic impact than distributed computing on the shape of business and markets. With distributed processing, computing power was moved to the operating elements in the business often to improve customer service as well as internal efficiency. Videotex extends the distribution directly to the customer. DIY processing has arrived.

The rapid acceptance of private videotex in the UK was caused by a number of factors. The first was the early recognition that videotex was a new communication medium that could be used by anyone. The threshold age for using videotex is generally considered to be four years old. The tutorial prompting of the user obviates the requirement for training. For the first time multiple, sophisticated, interactive computer applications are possible from a device that demands no prior experience. For the first time, the universal use of colour and graphics provides a means of communicating meaning rather than displaying alphanumeric. Videotex is a small step forward for computing, but a giant leap forward for communication.

As a general communication medium, videotex has many corporate applications. Typical terminal uses include management workstations, organisation notice boards, clerical workstations and computer-assisted learning stations. These uses generally displace prior methods to give tangible economic benefit. The participatory communication provided is generally geared to transaction or service, messaging, information dissemination or educational applications. The methods displaced are usually other types of communication. A good example of this displacement is in computer-assisted learning. Those who run in-house training establishments will recognise the inflationary costs of any kind of training that requires people to be transported from their place of work to a training centre. Then there are the costs of feeding and accommodating people while they are there. Finally, there is often a cost of providing a workplace replacement while the trainee is on a course.

Using videotex as a computer-assisted learning system, it is possible to use distance learning techniques to provide an equivalent learning experience to platform teaching in a classroom. It has been established that videotex CAL has attractive benefits in teaching administrative and clerical procedures. It is also being used experimentally at this time to teach skills – such as touch typing.

Because videotex is not application-limited, it can provide message services. Efforts are being made to harmonise videotex and teletex protocol specifications so that messages can be moved easily from one convention to another, with tremendous benefits for business. Such harmonisation, together with new generations of videotex terminals, offer also the technology for future home-based information systems.

The applicational development of videotex front-end interfaces to existing computer information and on-line databases is of fundamental importance to the growth to the videotex markets. These interfaces consist of hardware and software – the hardware handles the physical characteristics of the transport mechanism and the software provides logic control of the dialogue between user and computer together with

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appropriate access mechanisms to stored data. Both hardware and software are much more complex than a casual glance would indicate. Packaged systems, therefore, are being sold that provide a plug-compatible solution for various mainframes with the ability to write interface software in the front-end in high-level business-oriented programming languages. With this type of approach, sophisticated real-time interactive computer systems have been given a videotex front-end with just a few man-months of software development.

The benefit is that the real-time computer system often represents a high-value asset with which companies are reluctant to tinker. The addition of a videotex front-end, however, can transform the usefulness of the original system and make it usable by anyone. The utilisation of the asset and the return provided are thus enhanced. The exploration of videotex technology to date has been retarded by the structure of the videotex industry, particularly in the UK. The structuring of an industry around a public-services-fragmented perception of the total videotex opportunity, and diffused marketing effort. That is not to diminish the achievement of the public service in any way, but because of diverse industrial interests – chip makers, computer manufacturers, public service, TV set makers and information providers – no one was able to see the totality of the system problem-solving potential of the technology.

It is interesting to note that today there is just one vertically integrated company selling the total solution of own-manufactured computer, software and terminals integrated within a comprehensive system, together with all the supporting services. That company is ROCC Computers which, as Rediffusion Computers, set the corporate videotex ball rolling.

New videotex terminals will help to change current attitudes towards the technology. These new terminals differ in one important detail from previous terminals – they have been designed by and with the users. Up to now, the capabilities of the terminals have been largely dictated by the public service standards and the chip makers who have produced dedicated chip sets. This was important when the target was a vast residential market and low-unit costs were vital to any serious penetration efforts. But that residential market does not exist at this time. And the business market is more interested in acquiring the right tool for the job at an economic price rather than the standard tool at a cheap price.

Some of the functions of these new tools are worthy of note. First, perhaps, we should note the lessons of the market to date. Large screen domestic televisions tend to sit uncomfortably on top of desks. Alphanumeric keyboards are needed for alphanumeric messages. A telephone directory with only six numbers is a nuisance. Generally, keyboards have been poor from an ergonomic viewpoint. Lack of local page store and fast access bulk store at the terminal are limiting factors. There is no auto-answer on videotex terminals. The new generation of terminals do not have the limitations of prior devices, but they also add new capabilities to open new applicational opportunities. Because their feature/function specifications are not based on mass-produced dedicated chips, there is much improved added-value potential for the supplier who can design the most economic solution to a particular customer's problem. Batches of 2000 to 3000 customised terminals for large customers will be a feature of the videotex terminal business.

The current novel uses of private videotex are worthy of mention. These uses fall into what one might describe as 'information society' projects. Because of the sensitive commercial nature of the projects, comments must necessarily be circumspect, but some general observations are in order.

Firstly, few people seem to have realised that Prestel offers a complete, low-cost, quick-reaction, international distribution system that is both reliable and easy-to-use. Significant profits are available in using Prestel to disseminate information, provided the information has low-cost production, high volatility, market demand and widespread usage characteristics. A private videotex system can be used as a real-time collection point of information which can update Prestel instantaneously and then disseminate that information to many countries. This mixed in-house-public system approach could provide new opportunities for information distribution and could challenge existing private network services.

Secondly, the Prestel Gateway has focussed attention on long-distance call charges for videotex operation, but, strangely, few people seem to realise that new-generation videotex terminals can be easily connected directly to the PSS service. This makes videotex a very low-cost, long-distance telecommunication system. The real opportunity for Prestel Gateway might be in providing a national 'Yellow Pages' service with automatic switching into private systems.

Thirdly, videotex terminals are in their infancy. As a technology, videotex must be seen in conjunction with video cassette recorders, video disk, personal computers, and home information systems. The technologies are moving together to create new kinds of products, new publishing media and new kinds of communications media. These developments, led by devices such as ROCC's Teleputer, will transform business and social life.

In the home environment, developments in consumer telecommunications via TV cable technology cannot be divorced from videotex. The bridge systems between consumer and business telecommunications are most likely to be products developed from in-house videotex systems in order to use TV cable. The trend

# Lloyds Bank International SOPHO-NET Network

After running trials on an initial three SOPHO-NET nodes network, two located in London and one in New York, Lloyds Bank International has taken the decision to go ahead with implementation of a worldwide network, linking its operations in 47 countries. A further five nodes, to be located in London, Tokyo, Hong Kong, Paris and Madrid, have been ordered for immediate delivery and an estimated further 32 nodes will be ordered for delivery over the next three years.

When complete, the network will have three control centres. Europe and the Middle East will be controlled from London; North, Central and South America from New York and the Far East from Hong Kong. The London control centre will also overview the complete system. Only 15 telecommunications engineers will be necessary to manage the complete system.

The SOPHO-NET system will handle all data and text traffic, including the foreign exchange dealings, letters of credit, inter-bank information and electronic mail. Until recently, Lloyds Bank International had relied on a message-switching telegraph network, which was designed and built in-house. It was primarily used for fund transfer, although it was also used for other transmissions, which included administration traffic, even despite it not being ideally suited for this purpose. This message-switching system will act as one of the servers to the new network and revert to its primary function of funds transfer.

There are some 20 different applications in total running on a wide range of equipment, which includes IBM, Digital Equipment, Wang, General Automation and Perkin Elmer machines, which will be linked by the SOPHO-NET system. A large number of personal computers, word processors, a dealer system (City Business System) and merchant banking facilities will also be connected, in addition to the funds transfer system.

Interfaces will be made to all public packet-switched data networks, the PSTN and leased lines operating at up to 14.4 kbit/s. Connection will be made to the telex network in the future. Also planned are links for the data network operated by Lloyds Bank plc and large corporate customers using the bank's Cashcall service will be able to connect to the system direct by linking into a node. Through this facility they will be able to access their own accounts directly and accurately ascertain their financial position in different parts of the world by, for example, using spreadsheet software in their computers and terminals.

## Fast Response Times

The need for an intelligent data communications network arose both from the nature of banking operations and Lloyds various programs to automate these. A multi-national wishing to borrow money in several countries generally requires, at most, a one-hour response rate. Currency deals are similarly undertaken on a virtually instantaneous basis, requiring the most up-to-date information. Lloyds Bank International are convinced that SOPHO-NET will provide them with the required fast response rates. In addition, the interconnection of all processors will allow real-time access to all databases linked to SOPHO-NET, irrespective of where they are, providing a vast store of information on tap. In the increasingly competitive world of banking, Lloyds are convinced that with the implementation of SOPHO-NET they will be able to offer improved services to customers and clients.

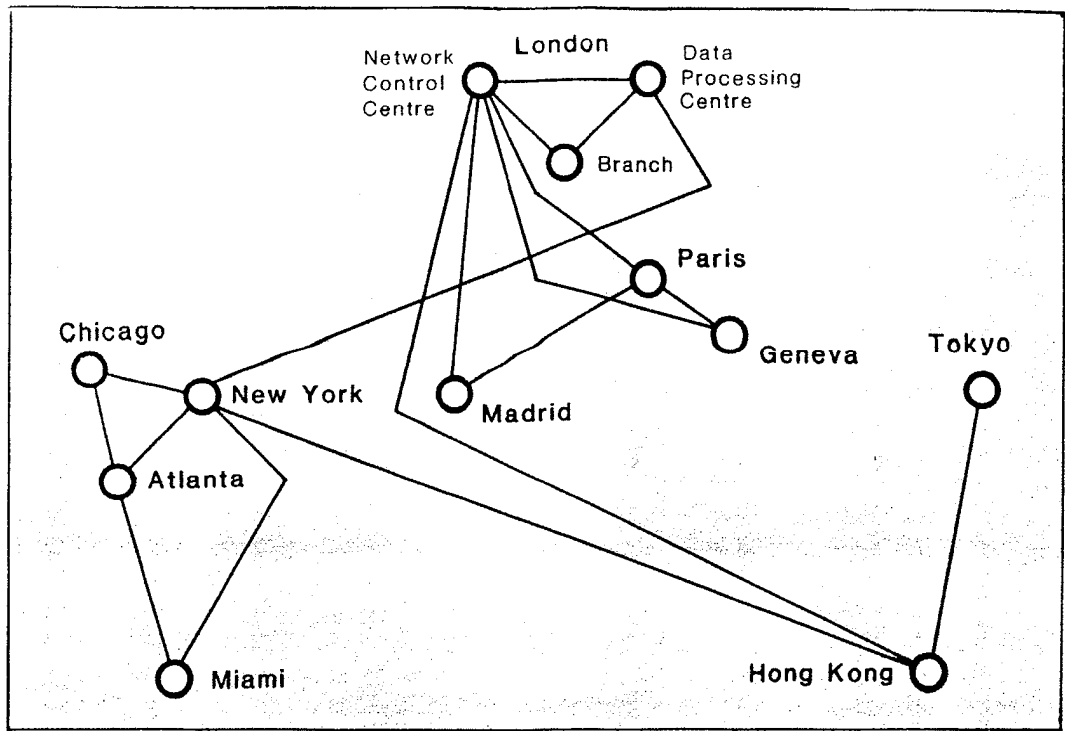
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## VIDEOTEX POISED FOR BREAKTHROUGH *Continued from previous page*

is that office local area networks will be developed from CATV technology – the same technology that will provide consumer telecommunications of the future. Videotex could be the catalyst in this respect.

Most in-house videotex projects have been driven by strategic corporate management. Data processing departments have remained aloof. They have been unable to decide whether videotex was a toy or a threat and they have been unable to understand that a new communication medium is a major opportunity. Thus they have been reluctant to move into videotex and others have seized the initiative. It can be expected that DP departments will continue to resist. The argument – videotex is just another VDU – can still be heard. The fast-coming developments in videotex will obliterate that argument forever. There can be little doubt that videotex is a major worldwide phenomenon. For the next few years, the corporate videotex market will be the front-runner in product development and business opportunity. Later in the decade, the residential market will move into the ascendancy. In business, or in the home, videotex will provide information at your fingertips. It bridges the gap between business and consumer telecommunications.



*Lloyds Bank International Data Network*

### Ideal architecture

SOPHO-NET impressed Lloyds Bank International, when they were evaluating a number of systems, because its architecture met the strategic network requirements exactly. It offers complete security through its three-level user password system, as well as security of transmission by selection of suitable media for confidential information when required. Its distributed network management and diagnostic software, is according to Brian John, Manager of International Telecommunications at the Bank, way ahead of the rest of the industry. This means that all maintenance can be performed from a central point. Distributed control also enables extra software facilities to be loaded without shutting down the system and failure of a node results in automatic re-configuration and dynamic selection of alternative routing.

An integral part of the system's software is invoicing, which will allow the Bank to cost and charge usage of SOPHO-NET to each user. Alternative systems required a special package to do this. SOPHO-NET also allows terminals to be multi-user, with more than one password, routing and authorisation table. Lloyds expect that between 5 and 6 users, each with their own password, will make use of each terminal.

### Protocol conversions

Like most organisations, Lloyds Bank International already have a large variety of different data and text systems and terminals installed. As Brian John said, "There was no way we could replace all this to meet the demands of protocol-dedicated networking. The neutrality of SOPHO-NET will give us a significant lead over our competitors. Frankly, its software and hardware structure is exactly the way every multinational organisation should be approaching their networking requirements."

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### COMMUNICATIONS SOFTWARE CATALOGUE

*A Communications Software catalogue has been produced by Tandata Marketing, describing the range of micropacks designed for use with the company's range of modems. It also includes details of some of the general communications software that has been well proven and may be used with Tandata's latest product, the multi baud rate-dial, auto answer modem, the Tm512. The*

*catalogue not only provides a description of 19 software packages detailing features and defining the Tandata modem with which it can be used, but gives a summary of the types of micro for which it is available.*

*Information on availability, detailed information on micros and stock codes for orders are contained in the price list.*

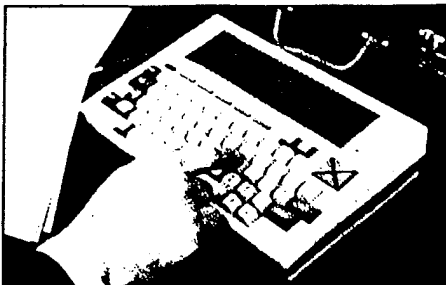
Tandata Marketing,  
Albert Road North, Malvern,  
Worcs. WR14 2TL, UK. (06845) 68421

# THE OFFICE IS WHERE YOU ARE

Will modern technology change our established pattern of having separate homes and workplaces?

4-526  
③  
Our pattern of having separate homes and workplaces is one of the most fundamental and unquestioned parts of modern life. Yet it is a pattern that was only introduced during the industrial revolution—and then mostly because of the pressure to stop exploitation of women and children in factories, coupled with male trade unionist's anxiety to restrict labour and thus protect men's jobs and pay.

Now we have come full circle and ideas about work are changing. Hours of work and the length of careers are said to be shortening, slipping from 'the three 48s' (a 48-hour week, 48-week year and 48-year working life) to the three 30s. Technology is now available and cheap enough for individuals to have their own 'personal office' and so run their time more flexibly. Companies continue to find rates, rents and overheads in cities astronomical, and are either moving to suburbs or establishing sub-sectors elsewhere. Then of course sub-sectors are formed of sub-sectors, with top management



NEC micro with telex.

shared between them and moving from office to office as required. The natural corollary of which is for these managers to establish their 'nominal base' not in any one office, but at home.

And where senior management leads it seems likely for more junior personnel to follow. Then of course the consequence of the introduction of integrated office technology is to reduce or eliminate the need for 'disciplined masters'—formerly as necessary in offices or factories, now increasingly obsolete in both.

Where companies have done their research and systematically set up an itinerant or home based workforce, the schemes seem to have been successful, but where the procedure has been more improvised, results are more varied.

Mike Aldrich of ROCC Computers told us he had tried out working from home, on and off, for about three months: with one terminal at home, one in his office at Crawley and another on his secretary's desk.

All three vdu's were ROCC's own Teleputers linked by phone lines to the corporate office automation/comms system and its 300 users. Called Advisor, it is a Videotex system used substantially as an in-house database with links to public services like Prestel and automatic dialling to the telex network. The whole of the company's accounts are run on it and all memos and internal mail are handled electronically using its wp package.

With Advisor, Mike solved the problems of never being available at the right time or for the right person, never remembering where he was supposed to be next and at what time and—when on the move—his secretary never being able to keep him up to date. He had also always been plagued by calls from colleagues in the evening—at least they knew where to get hold

of him at that time and if people can phone they will—and international calls during the night. He wanted to be on time for parents' evenings.

*But after trying home-based existence for three months he reverted to office life, although he says hour for hour home working was more productive. He was bored. His three children treated his workstyle as a joke and 'the box' on the pine table in his study got in the way of dusting and hoovering.*

Sounds frivolous, maybe. But these are the real issues about working at home: issues which we identified nearly two years ago as making it essential to establish a home/office 'condominion'—a partnership between company and employee in which the company invests in the provision of a specially converted, or even built, office within the home.

## The Social Choice

- who pays for installation of equipment?
- where do those people work who have no separate room for a study?
- what replaces the companionship of the office, the quick drink in the local and the corporate loyalty that comes from being lumped in a building with other employees?

Where homeworking falls down is that we need—or we feel we need—others to work with, both to bounce ideas off and for companionship. And also try to imagine managing without



Voice messaging from Dictaphone.

At home with the Ricoh M5 copier.





Aldrich of ROCC plus 'box'. The kids disapproved.



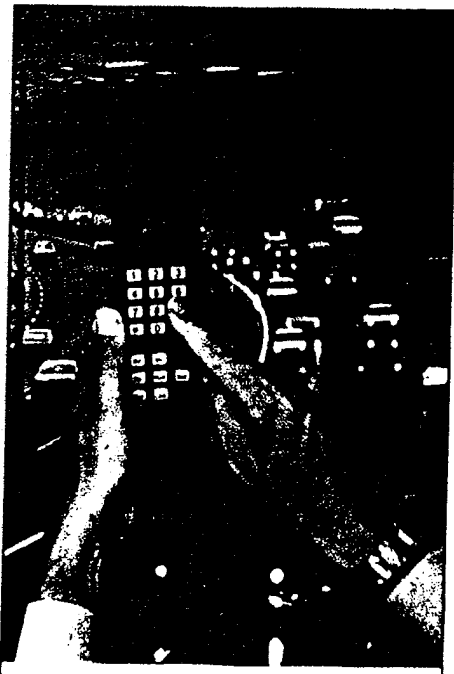
Fax of the flexible life (by NEC).

all those documents in the office, the expertise there is on tap and the sheer volume of corporate paraphernalia (from phone books for elsewhere in the country to the *Good Food Guide*).

Bear in mind, too, that the companies which are successfully carrying through homeworking schemes are not run-of-the-mill. F. International is a software firm and software development can be done anywhere; its staff are all highly motivated professionals, who are young and determined to make the scheme work. Rank Xerox (they don't come any more technology-oriented than that) has built an element of free enterprise into its 'networking' scheme by having all networkers form their own limited company; it also goes to lengthy and expensive measures to vet all potential homeworkers and their spouses.

Introducing a home-based workstyle is to some extent a matter of re-education. But whether or not we are prepared to change our entrenched office ways the number of portable or transportable machines is growing rapidly. Just about

*Elcom in-car answering.*



all conventional office equipment is available in a compact form.

### The Hardware Choice

- portable computers. Sales are going down, according to one survey because most portables are merely 'shrunken micros' as opposed to 'personal support systems'. Portables should have a decent sized screen (preferably 80x25 chrs by lines), and weigh no more than 5Kg; they should also have a good sized memory (8Kbytes, plus) if you want to be able to store more than two or three pages of text and good communications (an RS232C, plus electronic mail which is thrown in on some like the Olivetti M10 and NEC's PC8201A). Look at the range of software they run.
- electronic mail. There is quite a difference between the various services (see *BS&E* July/August issue).
- personal fax/telex/copiers. For fax, the most lightweight are 6Kg and more, and as yet only Group 2 (eg: Answercall's 2000 and Logico's Shuttle Boy). Using a terminal eg: a portable computer and one of the electronic mail systems that access telex is probably better than buying a single specialist machine.
- public database services (eg: Prestel). If you are a specialist there's bound to be a specialist database service for you.
- voice messaging. With BT's Voicebank messaging service each subscriber has a 'mailbox' number that people dial to leave a message. Each box holds seven 25-second messages for 12 hours. To get messages, you simply key in your password on a special keypad, hold it to the phone receiver and enter a command, and listen to/ repeat/delete what you hear. Rental is £35 per quarter, plus £10 for having your details put onto the Voicebank computer and your first keypad is free (subsequent ones are £45).

Compare Dictaphone's system: a



*The not-so-humble bleep . . .*

dictation machine with adaptor that transmits voice text at double speed down the line to a receiving dictation machine (£500 or less); or a small touch-tone pad with record, rewind, playback etc that allows you to dictate down the phone as if it were the dictating machine itself (£800 for a phone interface to the office's dictating system, plus £50 per pad).

### Alternatives

- answering machines. If coupled with a remote control, they can be enough. Elcom has just gained approval for one that works on cellular. It comes in three versions, one that permits control via the cellular phone handset; one that works via a simple switch, and the third that is a full control panel fitted alongside your handset. Price for the basic model is £295, plus £50 for a remote control unit, with installation said to be nominal.
- wide area paging. Don't forget the humble bleep. It can be useful if you need an unobtrusive form of communication. It's also not limited to bleep-only pagers now. You can buy a bleep that merely vibrates to alert you, or one that has a message display (eg: to give you the number of someone calling you), or even one with voice messages. If you are outside London

the only companies in the running are Air Call and BT. Only Air Call and Inter-City Paging (which operates a 25mile radius of London) can retain messages in their memory. With some systems, callers can dial your pager directly without going through an operator and without paying anything (Air Call in London/BT nationwide). Expect to pay £100-200 per year for tone only bleeps, £250 plus for voice and £200-350 for display depending on the number of digits.

**Business Centres**

Portable equipment will in most cases continue to get smaller, the limiting factor tending to be batteries. It will, we are told, also continue to drop in price.

Along with this portable boom, facilities are also improving for itinerant workers. Several authorities are promoting 'business centres' which people can retreat to for secretarial help, phones and a bank of office equipment (cellular too is offering secretarial/translation/messaging services).

BT's Network Nine, for example, offers an occasional London base for people on the move. Networkers pay an annual fee of £480 and for that they get a West End business address (without West End overheads), with full postal services, phones, telephone answering and message routing, telex and fax (both at £1.50 per A4 sheet), secretarial support (at £8 per hour) including wp, report preparation, printing, copying etc. Telecom Gold or ITT Dialcom electronic mail and computing facilities with comms over the PSS network at BT rates. The centre is open all hours and is available for conferences (from £75 per half day) and presentations (£10-15 per hour).

This type of community centre that people from different companies can use as an occasional office-down-the-road seems to be the shape of things to come. People can be home-based and on the move with portable comms to keep in touch, but they can also fall back on a 'traditional' office location.

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19 Tue **CRAWLEY**  
 From bottom to the top — the route to directorship. M. Aldrich (Rocc Computers (formerly Rediffusion Computers)) at Seeboard, Russell Way, 7 p.m. Joint with Surrey YM Sect. (YM Sect.)