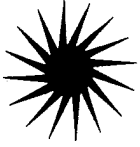


Information



REDIFFUSION
Computers

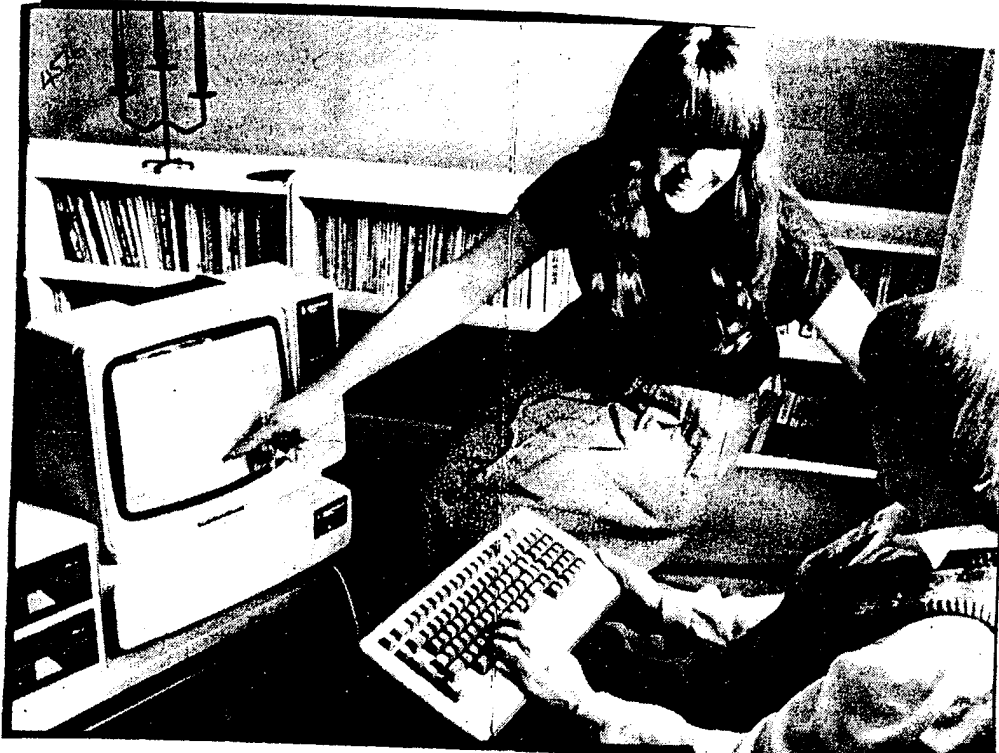
A Member of the Rediffusion Group of Companies

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INTERNATIONAL PRESS-CUTTING BUREAU
Lancaster House,
70 Newington Causeway, London, S.E.1

Extract from
Greenock Telegraph, Renfrewshire,
Scotland

12 SEP 1983



INTERNATIONAL PRESS
CUTTING BUREAU
Extract from:
ADMINISTRATOR, London.

News and Developments

Network Technology, Networks (commercial aspects), Human Factors, Security and Video Applications.

Mr B N H Routledge of the Institute's Information and Systems Management Panel will be presenting a paper on Data Protection, and other speakers include Andrew Ibbotson of Esso Petroleum and Mike Aldrich of Rediffusion Computers, who spoke at the ISM Group Meeting last year.

Preferential rates are available to ICSA members. Full details and registration forms may be obtained from Gillian Bloomfield at Park Crescent or directly from The Conference Department, IERE 99 Gower Street, London, WC1E 6AZ.

On 20 October 1983, The Information and Systems Management Panel are planning to hold a one-day group meeting.

Further details of this meeting will appear in September's *Administrator*. Members who would like full details should contact Gillian Bloomfield at Park Crescent. A detailed programme will be available at the end of August ●

MRS Sandy Aldrich and her daughter Philippa find out her husband's work commitments from his office desk diary by consulting their home 'Teleputer' from the comfort of her sitting room armchair in Colgate.

Her husband is Mike Aldrich, head of Rediffusion Computers in Crawley and the Teleputer is claimed to be the first ever product which combines the personal computer with television and videotex.

With one in his home and one in the office, his wife can keep track of her busy executive husband and "book" him for family or social engagements and his secretary can run the business schedule.

Extract from
Director, London

-- SEP 1983

15
SPECIAL FEATURE

TELECOMMUNICATIONS

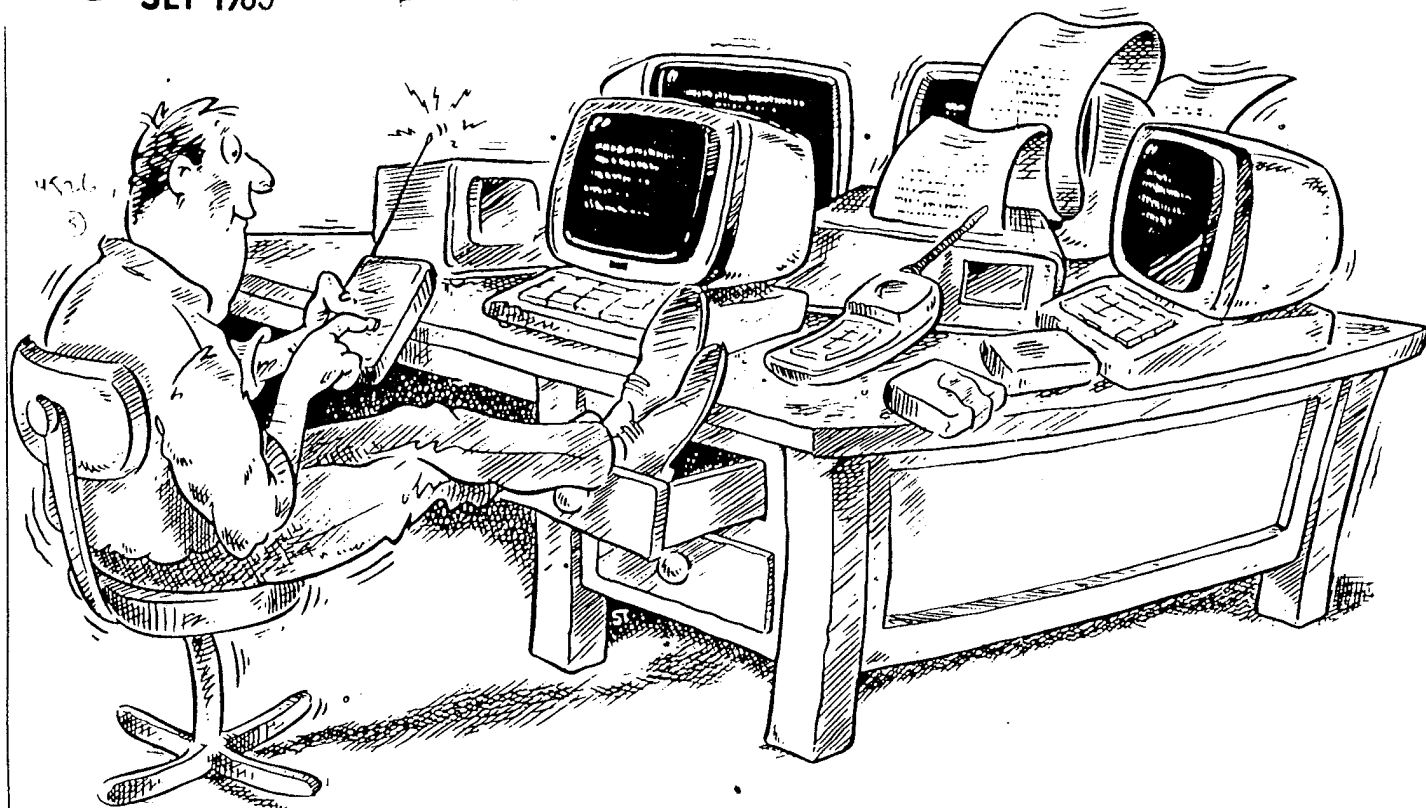


Illustration: Stuart Trotter

THE GLOBAL NETWORK COMES TO LIFE

As business journalist Paul Jenner shows, a new era in communications is dawning

The technical writer quickly becomes a frustrated and cynical man. Daily investigating, espousing and explaining new technology, he soon discovers that he is preaching mainly to the unconvertible.

He rapidly learns that the gestation period from initial demonstration to general acceptance in the marketplace is ten years.

After all, people are still writing to one another using pen, ink, paper and stamp just as they did when Rowland Hill initiated the penny post in 1844, still dictating to secretaries, still nattering over what is remarkably similar to the 1876-patented telephone. Did you know that the video-telephone was first demonstrated in 1929?

Forgive me, then, if I refuse to join in the tides of optimism over paperless offices, over Prestel, over 'fax', over the recabbling of Britain and over the many

brilliant ideas that are coming with liberalisation.

The cable optimists, for example, look to the example of the United States where there are approaching 5,000 systems, averaging 12 channels each and penetrating 35 per cent of households at the end of 1982. They forecast the same penetration here by 1990. To achieve that, market led, on the back of the entertainment industry, is very unlikely.

The States is not the same as the UK. There the most popular cable channels are the no-adverts Pay-TV movie channels. (American commercial breaks are often so long they have to interrupt them to remind you what programme you were watching; you can understand why Pay-TV is so popular.) But in the UK we already have two channels which carry no advertising and for which viewers currently pay £46 a year. And advertising on the other two channels is relatively unobtrusive by US standards. So this motivation is lacking. Indeed, British cable movie channels might, on the contrary, carry advertising.

Secondly, VCR penetration in the UK is the highest in the world and far higher than it was in the States when cable began to take off. At the end of 1982, around 15 per cent of British

households had a VCR, by the end of this year the figure will approach 30 per cent and by the end of 1984 it will be 40 per cent.

The VCR therefore has an unassailable lead over cable and few will give it up or be eager to pay for cable while they are still paying for a VCR.

Experimental movie channels in the UK are charging £7-£9 a month but for a full package of cable services the average is more likely to be £20 a month, plus the connection fee.

This is not to say that cable will not come, only that it will not come as fast as the optimists forecast - unless some additional impetus is introduced. That would be payment by business suppliers to cable operators for interactive communication with customers.

An invasion of cables

At present, about 1.5m. homes receive their TV programmes via cable but most of these systems are over 20 years old and use four or six channel multipair technology, not the star-configured co-axial cable the government wants and which will allow interactive services.

The probability is that only 10 per

cent of homes will be connected to co-ax cable by the end of the decade and it will be almost the end of the century before present US cable penetration is surpassed.

For business, this means that the potential applications of having co-ax cable running through urban homes, offices and shops – applications such as meter reading (telemetry), tele-banking, tele-shopping and information services – are still some way off; although there are important pilot projects like the one to link Thorn-EMI's Swindon cable network with BT's in Milton Keynes using BT's x25, so data can be transmitted between off-

Mickey Mouse and other options

Quite a lot, meanwhile, can still be accomplished down ordinary telephone lines. The telephone itself has not changed a great deal in 90 years, although handsets can now store numbers, re-dial engaged numbers, amplify speech, be cordless and look like Mickey Mouse. But there is a wide variety of non-voice options.

First there is fax. There are now believed to be over 20,000 facsimile transceivers installed in the UK, although when you consider the benefits, this seems a very small number indeed. The first transceivers were analogue and slow although they did have the advantage that they could represent a nine-tone grey scale. The latest Group 3 models operate at 4,800 bits per second which is between 30 and 60 seconds for an A4 document. For little over £2,000 you now have a table-top machine that will put time, date and origin stamp on a message received, and reproduce text

Messages can be typed into the 4000-character off-line memory of the 3M Whisper Writer, edited and then transmitted.



"Prestel got it wrong from the start in seeing itself as a consumer rather than a business service ... and continued to get it wrong"

and line drawings with excellent clarity.

There are few companies that would not benefit from such equipment. The problem is that fax is installed only to meet a specific communications need, usually internal but sometimes between customer and a close supplier. No thought is given to the wider application, no fax number is put on stationery and no one even bothers to go in the BT fax directory – only 3,000 users were listed in the 1982 edition, for example.

An over-optimistic view has frequently been taken about another telephone application, Prestel. Prestel got it wrong from the start in seeing itself as a consumer rather than a business service and continued to get it wrong in every public market forecast up to the time they sensibly gave up making public forecasts.

Left to its own devices, Prestel probably would still not have more than 75,000 registrations by 1985 (as against the one million target they once set), and only a fifth of these in private households. But there is now an additional dimension in Micronet 800, a new database for home computer users which can only be accessed via Prestel. This promises to be very popular and should double the number of registrations Prestel would otherwise have had by 1985 to some 150,000.

As regards private viewdata, although an average system costs over

£100,000, this market is now moving ahead with probably twice the number of installations that were made last year.

Something else you can now connect to a telephone line is a keyboard and printer such as the 3M WhisperWriter. You then have point-to-point communications with any other compatible terminal, typically at 300 baud. Usually such a set-up will allow storage and editing of at least two pages of text before transmission.

A wider application is possible with 'mailboxes'. The 18-month-old Telecom Gold, for example, has around 3,000 mailboxes accessed by KSRs, VDUs and word processors. Essentially it is an electronic pigeon-hole service with the ability to leave messages for people and to dial up to collect your own. But it also offers more sophisticated possibilities such as electronic filing.

Value Added Network Services have now been approved which will allow terminals – at around £1,000 or less – to interconnect with telex via a message switch.

This takes the old-fashioned telex bureau – requiring message dictation over the phone – into a new dimension and should attract big companies who understand the benefits of local and even personal terminals as opposed to the centralised telex room.

This development, together with the appearance of modern telex equipment with memory, editing and sometimes with VDU, is giving the telex network a new lease of life. Currently there are around 100,000 terminals on the telex network in the UK and around one and a half million worldwide. There are also some 15,000 teleprinters on private UK networks.

Instead of dying, as it had deserved with its slow transmission speed and antiquated equipment, telex now looks set for an Indian summer – but only until teletex gets a grip. Teletex is the new international standard for communication between word-processors, micros and electronic memory typewriters at 2,400 bits per second. Two thousand terminals are already installed in the UK. Teletex, too, will shortly permit interconnection with telex and, once that is understood, the sun will be setting on telex.

Yet another application for the ubiquitous telephone line is as the basis for a local area network (LAN). A jack

the reply, if appropriate, screened for the user with no further action on his or her part.

Externally, too, the PABX has a role to play. As well as sending data along speech lines it can link with the Telex service and, soon, Teletex. For ordinary data communications, therefore, site to site links are available using the public telephone service and nothing else.

Fair exchanges

GEC/Reliance and Plessey already have such digital exchanges on the market with data/speech integration features. Philips are about to enter the fray and by the end of the year choice will probably be even greater. British Telecom itself is moving into the market with its own brand of at least one PABX so some tough bargaining can be expected. Prices of these exchanges will drop anyway, though it will be more noticeable at the smaller-size system end of the market where more suppliers are heading – the 50-500 system lines area (system lines equals exchange lines, plus extensions).

There is, of course, a qualification.

So far I have described the data communications needs of, on average, seventy percent of an organisation's work. The remaining third consists, usually, of bulk data exchanges between computers, or heavy user terminals with operators keying into databases from raw information and so on. These data processing links form the hard core of a computer network and are unable to exist on the comparatively slow speeds of the systems so far described.

The Local Area Network, (LAN) was invented to solve this problem and, once the industry agrees on a set of standards, it will. LANs operate at extremely high speeds: ten or twenty megabits per second. They do this over short distances and are designed for internal high-level data communications links. Some are wired (special wiring is needed) on a ring main loop, some on a single route bus, some on a multi-channel bus.

The high speeds and instant access features built into the LANs ensure that the bulk of mainline data needed within the organisation, gets to where it is going without even the slight delays incurred by the telephone extension

"High speed communications of large amounts of data internally in an organisation, and between known data points of a permanent nature, will need a Local Area Network"

user of calling up and establishing connection. Their actual transmission speeds give them enormous data carrying capacities.

LANs use various protocols, each championed by its own manufacturer or group of manufacturers. Leading the field is Ethernet, introduced by Rank Xerox a decade ago and now adopted by many others as their recommendation. Other systems include the Cambridge Ring, Wangnet, Localnet, Silk, Omninet Magnaloop among a growing range of LANs.

The protocol chosen depends mainly on types of data, extent of transmission bursts, speeds and urgencies and is, essentially, a technician's decision.

Internally, then, these high speed LANs are for data communications links. Externally, the approximate equivalent is Megastream from British Telecom and whatever Mercury decide to call their high speed digital circuits. Megastream operates at two megabits per second, compatible, at least, with the speed of the LAN since comparatively few of the LAN's data communications will need to travel externally.

Most digital circuits, assuming one can get any at all, use ground cables, of copper or glass. Soon satellite communications will abound with services such as Satstream and the joint experimental scheme of GEC, BT, Rutherford Laboratory, various universities and others known as Project Universe. To the end user, the mode of transmission is irrelevant. Satellites might send high speed data to the USA more efficiently than underwater cables, but the director will be more interested in the cost, the conditions for renting circuits, availability on dial-up, speed and the binary error rate.

High speed communications of large amounts of data internally in an organisation and between known data points of a permanent nature will need a LAN. This promises to be a better solution than monolithic computer fed with

umpteen terminals, many of which want to talk to each other, not the computer at all. The result will be a dispersal of data processing from the big number cruncher servicing individual terminals to smaller, more economic, more manageable computers linked together on the LAN.

The bulk of data enquiries from sales staff looking up stock positions, accountants checking credit ratings and staff and management at all levels, will be better served by the data communications abilities of a digital PABX serving the speech communications too. Links externally will be with digital circuits, where they are needed, and speech circuits, such as the Teletext service, where they are not. Links will exist, too, between the LAN and the PABX to give outlets for both communications categories and to allow full flexibility of choice about external circuits.

The technology exists right now. The challenge is to find cost-effective ways of taking advantage of the new systems that are available.

ELECTRIFYING THE MAILMAN

Geoffrey Tyler, communications expert, explains the potential of computerised post

Mail is a centuries-old method of communication which has now, for the first time, come under attack from the computer. Telex and telegraph communications began the trend before the war, when cables became available for public use on any large scale, but electronics has pushed it farther and faster over the last few years.

There are many forms of electronic mail, though the concept is basically simple. Instead of having someone type a letter or memo to the intended recipient, they – or you – key it into a computer terminal and flash it along wires or radio beams to another terminal belonging to the recipient. A variation is to lodge the information in the recipient's segment of a computer file to await his or her checking in to see what is there.

Viewdata is one such technology using existing dial-up telephone lines to access a database. The computer holding the database will typically be at a head office. All employees, distributors, dealers, even customers, will have telephone numbers they can call to

socket goes in, a 'black box' plugs into the socket, the telephone and the terminal and plug into the box.

The LAN proper communicates at up to 10m bits per second. The LAN is significant because studies show that 85 per cent of communications are intra-company and that 60 per cent are within a single building. In the way of LANs is the problem of standards and the lack of a proper strategy on the part of would-be users.

The final thing you can do with a telephone is initiate a message to a beeper or, better still, speak direct to a mobile phone, probably in a car. Cellular radio will be with us after 1985, the DI licence winners BT/Securicor and Racal-Millicom.

Clearly the telephone line remains the key to business communications. By 1990, half the long distance trunk routes should carry optical fibres and the programme begun in 1980 to replace electro-mechanical telephone exchanges with System X, based on solid-state micro-circuitry, will be well advanced.

Most interesting of all is how Mercury Communications, licensed in February 1982 as an alternative to BT, will fare. The first service in London started in April. It will be in Birmingham by the end of the year and Manchester early in '84, while an announcement about optical trunk fibre works is imminent. First earth station will be mid-84: voice, computer data and video will all be able to go down the same channel.

DIGITAL COMMUNICATIONS: THE UNIVERSAL SOLUTION

Communications specialist Geoffrey Tyler examines the challenge of integration for business users

Until the last two or three years, little attention was focused on the need for data communications to be as versatile as speech communications. The reason was that office systems had not developed (at least not in the marketplace), to the level of being able to use such versatility. Current developments are changing all that.

Most communications systems have developed independently, using different types of technology and necessari-

"The introduction of digital electronics into the PABX has made available a huge data communications network . . . capable of extending to all parts of the organisation"

tating different kinds of networks. But there is now the prospect of rationalising the position.

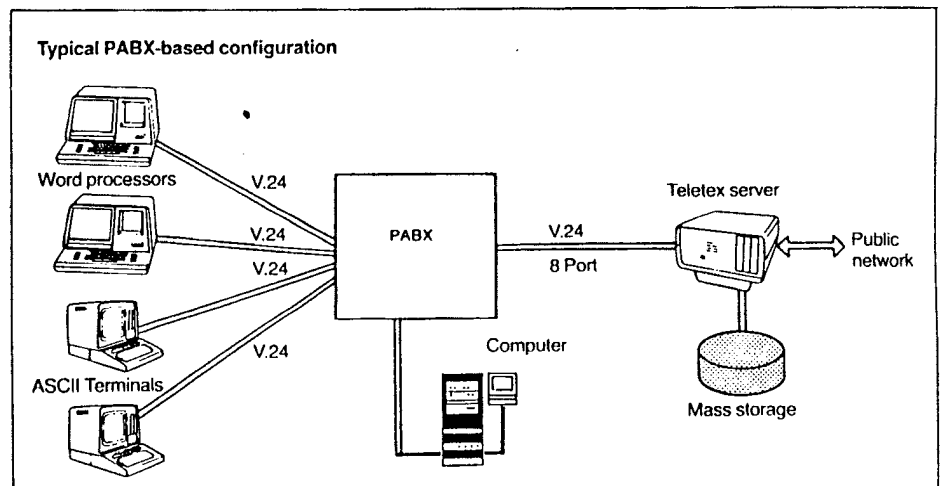
The PABX in your office right now is, potentially, the universal switch. If it is out of date - and according to most manufacturers that is highly likely - it cannot act in any practical way as a means of communicating data. If it uses electro-mechanical switches and analogue signalling, your exchange will be too complex, too slow and too prone to error.

Substitute a digital electronic PABX,

processors or computer communications ports connected to them.

Switching speeds vary but are usually more than fast enough to cope with the speeds available on computer terminals. For example, the speeds of GEC Reliance's SL-1 digital PABX are from below 300 bits per second to some 19,200 bits per second. Terminals are unlikely to fall outside these limits. The exchange's own switching speed is 64,000 bits per second, so it can be seen that nothing in the system itself slows communications down.

Until recently, communications of data have had to be established on a purpose-built basis. Communications links were established between computers, or computers and terminals and used for the express purpose of sending data. Any ordinary twisted-pair telephone cable - and most buildings are riddled with the stuff - can be used as a data communication link. What is



and the potential expands dramatically. The digital PABX provides many benefits in speech communications alone. Instant connections, auto-call back from engaged extensions, message storing, call transfer as one wanders around the works (called 'Follow me' in PABX jargon), conference calls, priority override of existing connected calls and many more.

The feature of outstanding importance is that the digital electronic PABX makes no distinction between data and speech. It receives digital signals from its extensions and treats all alike. Those extensions, therefore, can be key-paid telephones, special feature phones (providing single-named key dialling, direct speech conversations and so on), or they can be data terminal units with computer terminals, word

processors or computer communications ports connected to them. more, every telephone extension user is a potential transceiver of data, given the necessary terminal, word processor or microcomputer.

The introduction of digital electronics into the PABX has made available a huge data communications network which, channelled through the universal switch, is capable of extending to all parts of an organisation. This is an essential element in the electronic office, which relies for on such a versatile channel of data communications.

Internally, the computer database is just another heavily used extension, as far as the PABX is concerned. If all its ports are engaged, callers may 'camp on', to be put through automatically as soon as one becomes free. If the terminal has a buffer store, the data can then be transmitted automatically and

gain access to that database. Some of those telephone numbers will allow them to tap selected parts of the database – customers will get only sales information, for example, and not be able to check on the company's order book as salesmen can.

Within a database, however, individuals may have pigeonholes for their own use where they can file aide memoires, diary notes, instructions to secretaries and so on and have filed by others information destined for their eyes alone. When a salesman calls in from home late one evening after a busy day he can call up his diary for the next day, notes to phone people, information on a special price deal he wanted, perhaps a note of congratulations from his boss on a recent big order. The salesman replies by sending the boss an acknowledgement and the usual request for a rise, details which will appear on the boss's screen when he gets to the office next day and keys in for messages.

The terminals in question are television sets linked to the telephone network and operated by a small hand-held keyboard – Prestel style. In fact a Prestel adaptor will do the job nicely, provided the user knows the telephone number of his database.

Currently, the cabling of Britain is a subject of intense debate. Although the Hunt Report almost totally ignored the possibilities of cabling for business use, this was picked up in the subsequent White Paper. With a cabled television in every home and office we have the ultimate terminal: people could send, receive and store electronic mail. Also, TVs with memories exist, though there are probably few in the field.

Placing orders down the phone

Mike Aldrich, managing director of Rediffusion Computers, suggests that cabling could bring data services to seventy per cent of households in six years. Include in that the takeup of the facility by small businesses, and we have the start of electronic mail used between companies for order placing, delivery notifying, invoicing and so on. This is where electronic mail is most likely to start.

That move gives the electronic office a chance to get away from the multimedia hybrid of today. When even the most automated of offices receives a

"Facsimile transmission should be one of those communications success stories but, so far at any rate, it has failed to make a big impression"

paper order, the contents of the order may well be keyed into a computer to start its processing, but the original document has to be filed. Eventually it may be microfilmed, but probably not until the invoice has been paid.

If that order arrives by electronic mail, with some form of origination point verification conducted by the computer on receipt – normal answer-back routines would suffice for most cases – then the computer process starts

Tapping the system: a GEC Viewdata screen operated by a new alpha-numeric keyboard.



right away. Summary information will allow management to keep an eye on the situation and, of course, screen instructions to those who are to make up the order.

Other forms of electronic mail include facsimile and Teletext.

Teletext, dealt with in more detail in another article, operates at 20 to 30 times the speed of Telex and can be accessed directly from any computer terminal or word processor in the company. In fact, failure to make use of this facility means that a company is getting only part of the benefit of Teletext. The word processor in the office right now can, by direct hook-up to the Teletext telephone line or by going through an electronic PABX, send data to other locations in the UK. At first this will be only to other Teletext users, but if BT keeps to target, the facility will soon

mean that a data message can be sent by Teletext to users of the PSS and other digital services and to Telex terminals.

Facsimile should be one of those communications success stories but, so far at any rate, it has failed to make a big impression. Facsimile is the scanning of a document to reproduce it exactly at the receiving end. Like most forms of electronic mail it used the ubiquitous telephone circuits and nothing more fancy.

In the past, fax has suffered from a lack of standardisation. It was impossible to be sure that the recipient's machine was capable of receiving a communication from one's own machine. Today, electronics and an effort in co-operation by manufacturers, means that all new machines are compatible and many are compatible with older classes of machines, too.

In the past, facsimile was used for in-house communicators for specific office systems, perhaps to send working diagrams across a works site, or between offices of the same company. It has not yet become a universal communications medium, though a fax 'directory' does exist.

High-speed reproduction

Today's fast fax machines will scan an A4 page in about fifteen seconds. As that is roughly the same time as it takes Teletext to transmit a single page of A4 typed in single spacing to a greater number of recipients, it would seem that fax may well find itself pushed into the 'graphics' corner of the market. Where diagrams or illustrations need to be sent by electronic mail, fax is the best method known today. But what will happen when optical disk drives come along on small computers or word processors to make digital storage of images a practical proposition is another matter.

There are some fax machines under development which will combine digital and image-scanning transmissions. That means that text and numerical data can be sent from a keyboard, tape or database and the pictorial part of the transmission will be scanned from a document, all in the one automatic operation. They should not be too long in coming to the market.

Electronic mail is a term which covers a group of systems all of which allow

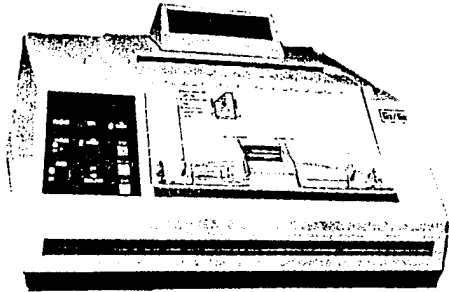
SPECIAL FEATURE

users to send communications of data/information by means other than paper. The telephone might be faster, but electronic mail provides proof, or at least evidence, of transmission. The computer holding everyone's electronic mailboxes can have an archive file of all memos sent which can be accessed by qualified individuals. That means even the "Memo? What memo?" excuse will no longer work. The transmission and successful lodging of memos can be verified from the internal audit trail.

Will it save you money?

Comparative costs are not easy to assess between conventional and electronic mail. On the face of it, the electronic mail terminal, be it micro-computer, 'smart' terminal, word processor, cable TV, Prestel TV, could cost from £700 to £6000 or more. The Prestel-type TV comes at the low end, followed by terminals and word

The 30-second postman: Muirhead's 'Mufax Courier 7800' can transmit a document anywhere in the world in half a minute.



processors, though in the last case, the prime function is unlikely to be electronic mail alone.

This investment has to be justified by an apparent saving in postage. Other operations are much the same: the information has still to be keyed in by someone, so we do not lose the typing of the letter. However, once the time factor is taken into account, things look different.

Time is saved in keying since electronic mail encourages brevity. Salutations are ignored totally and requests for or provision of information is presented blandly. What is more, most communications come directly from the transmitter, or his secretary, and not via a typing pool. No enveloping, stamping, collection and similar operations are involved. No time is spent sorting and opening mail at the receiving end and once in the system, computer hic-

"By the year 2000, one in six of the vehicles on the roads of Western Europe could be carrying a radio telephone"

cup's apart, there is no fear of total loss.

More important is the time saving for executives in getting information while it is still up to date. Wars have been lost because of the time delay in getting information to the general who made a decision on the basis of a situation which had changed in the meantime. These days, that can happen to companies too. An organisation which is capable of responding quickly to customer demands does not want the same stock to be committed to two different customers by sales branches in possession of the same information. There are only two ways to overcome that - keep twice as much stock as one really needs, with the tie-up of capital which goes with it, or streamline communications.

GEC Viewdata Systems treat this as a priority. Their systems take information from Prestel type TV sets in sales branches and update the database. At the same time, they update that information on screens as they are being used. The currency of information which GEC viewdata users have is as good as it could be.

How one assesses the cost advantages of that kind of immediate communication can be judged only by the management of each company depending on the need for speed and immediacy. But that is what electronic mail is all about.

IN TOUCH ON THE MOVE

Technology correspondent David Harvey reports on the huge business potential of mobile communications

By the turn of the century, 20m., or one in six, of the vehicles on Western Europe's roads could be carrying a radio telephone. Also by then, 150m. Europeans, or half the total population, could be using portable telephones. But the operative word in the Eurodata Foundation study, carried out last year,

is 'could'. There is a lot of ground to be made up before these forecasts are fulfilled.

A glance at the current UK statistics shows how far there is to go. For one thing, use of mobile communications devices is almost exclusive to the working population. Currently, 350,000 licensed radio telephones and 200,000 radio pagers are in use in a national workforce of some 23m., representing a take-up of 2.4 per cent.

Yet this comparatively low incidence of use bears little relation to the potential of mobile communications. Ray Northcott, principal of PACTEL's telecommunications division, believes that a great number of businesses stand to gain. "This includes any company with salesmen and engineers on the road whom they need to contact urgently, construction workers on site, and so on." Some organisations already use mobile radio and paging in these kind of circumstances, "but a surprising number don't".

Congestion on the Ether

Not only are these systems useful to companies in manufacturing and industrial industries, they can also benefit any other business or commercial organisation which urgently needs to contact people on the move. "There's a great deal of untapped potential in the service and distributive areas," says Northcott. Journalism and insurance are two prime candidates for mobile communications, he suggests.

So what is holding companies back at present?

Northcott believes one factor is the restrictive regulatory environment which has been enforced in the UK. This has meant that whatever mobile radio frequencies have been available in the past are now congested and often inefficient in the main conurbations. Several organisations have looked at the potential presented by mobile radio and decided that the levels of interference and other technical problems were simply too great, according to Northcott. In these circumstances, they have opted for paging.

Prospects of substantial improvement in the availability and quality of mobile telephone services are good though, thanks to a more liberal telecommunications policy and innovations

coming through in the near future. Cellular radio, due to go on the air in March 1985 in the London region, and extending to the capital's radiating motorways, should solve the congestion problem. But that alone is not enough to result in the kind of rapid growth which is necessary to make the forecasts come true.

Awareness of the scope presented by mobile communications is low, says Northcott, and a greater up-take will depend on the successful education of the business community. The current influx of new equipment, from home and overseas, should stimulate this process.

Paging devices, for example, are becoming far more sophisticated. They range from single-tone beepers to devices providing multi-tone signals, small visual displays, limited voice messages and most recently, text out-



Britain's first computer-controlled direct voice paging system from AirCall Ltd reduces time wastage and phone costs.

put. These innovations significantly extend the scope of paging.

Increasingly, it is recognised that the ability to keep communications open at all times is a valuable asset for business. Although few companies work 24 hours a day, there are two possibilities for those who want to keep their lines of communication open round the clock. They can use telephone answering machines or electronic mail. The first is rapidly finding a range of diverse applications, while the second is only now beginning to become available. Along with other telecommunications innovations, these facilities extend the reach of the office to virtually anywhere in the UK and its coastal waters.

"The great advantage of viewdata over orthodox computer systems is its simplicity . . . even for the most computerphobic . . ."

VIEWDATA'S ELECTRONIC REACH

TV could turn companies to new business opportunities: David Harvey explains

The fact that Prestel did not take off in a meteoric flash but barely crawled off the launching pad is no reflection on the technology. There is no doubt that the notion of linking a modified colour television set operated by a simple key pad via the telephone network to a computer was ingenious. Aside from anything else, it promised a new era in cheap, easily usable mass communications. The problem has been in the development of cost-effective applications. Experience with the medium, some important innovations and some notable successes are helping to change all that. Today, viewdata's potential is beginning to be realised.

Viewdata, or videotex as it is also known, can operate in two modes. It can either be used to disseminate information, the original role of Prestel. Or the system can be used interactively so that users can send and receive messages and instructions, a facility available on private viewdata systems and recently on Prestel.

The great advantage of viewdata over orthodox computer systems is its simplicity. It is friendly enough to soothe the fears of even the most computer-phobic and, since any home with the necessary raw materials, a colour television set and a telephone, can be wired up, viewdata has a ready-made network.

There is now no doubt that Prestel, as it was originally packaged, did not have mass-market appeal. There might have been plenty of information available. But much of that was available in cheaper or more convenient form from a variety of other sources. True, view-

data had the potential for rapid up-dates, but that was not a major inducement for most domestic subscribers. It was a different matter for business users, though.

Travel agents were among the first to take to the new medium; other businesses with specialist information needs, particularly in the financial sector, have capitalised on the ability of viewdata to provide regularly up-dated information.

By July, there were 23,000 sets installed in the business sector with travel agencies at the top of the league followed by commodity and foreign exchange dealers and then businesses from a number of different sectors. A popular application is for salesmen and service engineers operating from home who need to keep in touch with base in and out of office hours. A growing proportion of business users are plugged into Prestel as closed user groups of which there are now several hundred.

Although any Prestel subscriber can tap the 256,000 pages of information provided by 1,000 information providers for general consumption, a closed user group service is a protected



The 'Vutel' from Plessey comprises a telephone, push button key pad, five-inch VDU and a two-page memory store.

database which allows access to authorised members only.

According to some in the viewdata industry, Prestel as a passive information service is unlikely to have much of a future. With the advent of Gateway, which allows private company computers to be linked into the network, the possibilities are greatly enhanced. Already the glimmerings of things to come can be seen in various pioneering projects.

One of the major advantages of Gateway is that it effectively upgrades Prestel to an interactive service. Telebanking and teleshopping both become feasible. Nottingham Building Society

offers both through Homelink, a service developed with the Royal Bank of Scotland and British Telecom.

In the past, people have been reluctant to subscribe to Prestel because of the cost. Nottingham Building Society can afford to supply the special converter free of charge, or for a small charge, depending on the size of the customer's account.

Once plugged in, Homelink subscribers can conduct a range of banking functions through their television sets, order goods from a number of retailers, book holidays and arrange to draw money from any of 200 Thomas Cook branches. Regular Prestel services are theirs for £20 a year.

Far from toying with the new technology, Nottingham Building Society is

"Any organisation which needs to establish links with its branches, would find viewdata a vast improvement over traditional methods of communication"

exploit viewdata's unique features. Data-freight was pioneered by British Road Services as a means of matching lorries with loads. About 150 companies scattered throughout the UK are linked via Gateway to Prestel so that managers can find out essential data on available transport from a central database.

The Viewdata Industry Association, which represents the interests of many

managers to re-order as and when necessary. Pharmaceutical companies have found that viewdata provides a practical means for salesmen to send in their orders at the end of the day and to relay information to them about stocks and other developments. Other applications, including the use of viewdata in doctors' surgeries to record the results of clinical drug trials, are also being investigated.

While Prestel's closed user group is one option for companies which want to introduce viewdata into their operations, there is also a growing private viewdata sector. Users can set up their own viewdata service based on in-house computing facilities, but the costs are inevitably much higher than those of using Prestel. On the other hand, the system can be custom-built.

Find the model . . .

BL started by setting up an in-house viewdata facility to improve the ordering process through its dealer network. Using Stock Locator, BL car distributors and dealers can make a nationwide search for the particular make and model required and receive an answer within 30 seconds. Showrooms can also talk to each other using an electronic mail facility.

Building on its own experience, BL has now joined the small but growing band of those providing a viewdata bureau service. Viewshare, giving national coverage at local dial-up costs, is suitable for the same kind of applications already developed on Prestel closed user groups and private systems. The argument for a bureau such as this is that it offers a cost-effective alternative to both these options.

Although viewdata's reception was initially disappointing, there are now grounds for believing that the technology has an important role to play both in the domestic and business sectors. Like all technologies, though, it has its limitations as well as its unique advantages. The challenge has been to find the applications which make viewdata a profitable investment. Several organisations are convinced that they have found some of them and there are a number of projects underway which are being watched with great interest. If they prove as successful as their backers hope, they could turn business on to viewdata in a big way. ●



BL Systems' 'StockLocator' system in action. From this emerged 'Viewshare', a private viewdata bureau service.

convinced that it is the only way it could develop its business on the scale it plans. The society has its eyes on a potential 8m. customers throughout the United Kingdom. Only through viewdata's electronic tentacles could it hope to reach them cost-effectively.

Another interactive service, Club 403, is being pioneered in the Birmingham region to provide teleshopping, electronic mail and other services.

Other organisations that have plugged into Prestel through Gateway include American Express, which provides instant information on airport departures and deliveries. The travel trade now has a further facility through Skytrack, a viewdata service which allows bookings to be placed with many of the leading airlines.

Industry at large is beginning to ex-

of the 60 manufacturers, software houses and information suppliers that make up the UK scene, is watching the development of the market with predictable interest. On the strength of experience to date, the VIA sees a number of opportunities.

Any decentralised organisation, or one which needs to establish regular two-way links with scattered branches and dealers could find that viewdata represents a vast improvement over traditional methods of communications. Multi-branch estate agencies are prime candidates. So too are breweries.

Currently, the typical method of chasing orders from retailers is to have people ringing round the outlets once a week, a time-consuming, hit-and-miss affair. A viewdata link between the brewery and sales points would enable