THE ROLE OF VIDEOTEX AS AN INFORMATION PROVIDER

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Videotex is the rather inelegant international name given to viewdata. Viewdata is the interactive text-based information system delivered by telephone line to a domestic television or to a television-based terminal. Videotex, along with teletext which is another text-based information system were invented in the United Kingdom and to-date 98% of the world's videotex and teletext systems and terminals operate to the standards established by the U.K. By the middle of 1983, over 1,000,000 teletext televisions and around 30,000 videotex terminals of various types were in use in the U.K.

Videotex and teletext are rightly linked together because not only do they share the same colour character representation and graphics but they also compete in the same market. Videotex and teletext were both originally aimed at the domestic market. Teletext as a broadcast service is a receive-only communications system. Videotex because of its distribution by telephone line is a send and receive system, or real-time interactive to use the technical terms.

Both systems have been in development for over a decade. They were brilliantly conceived and, considering their pioneering natures, superbly implemented. The decade of experience has naturally changed some of the original emphases but, surprisingly the basic ideas have been all validated and remain unaltered. Bearing in mind that both were the result of technological push rather than marketing push, the visionary nature of the inventors is now becoming apparent.

It is much easier now to see the trend towards the home-centring of human activity. The electronic cottage was a wild dream in the early 1970s. Today, there are over 1,000,000 personal computers, over 4,000,000 video cassette recorders, and around 20,000,000 colour televisions in British homes. Sales of domestic appliances have shot up. Between 1978-82, sales of fridge freezers increased 46%, tumble dryers advanced 10% and coffee makers grew by 238%. In 1982, colour television grew 31%, microwave ovens rose 70%, deep fat fryers were up 30% and even central heating installations rose 14%. All of this was happening with 3 million people unemployed and during the worst economic recession in 50 years.

The modern home is said to contain machinery equivalent to the turn of the century textile mill. The inventors of videotex and teletext foresaw a demand for information services to complement the growing sophistication and mechanization of the home of the latter part of the twentieth century. By the end of the century we are told some 80% of the houses in the U.K. will be owned by their occupiers. Those houses might be more electronic castles than electronic cottages.

Videotex and teletext progressed to market by public service. Videotex was launched as Prestel, a service supplied by the then British Post Office which latterly had its telecommunications activities hived off into British Telecom. Teletext became the

CEEFAX (BBC) and ORACLE (IBA) services offered by the broadcasting organizations.

Videotex and teletext fought for the domestic market and videotex lost. It was not a once and for all cataclysmic war. It was the first of a series of battles that will be fought and re-fought over coming decades as telecommunications networks struggle for market success. The first battle was telephony vs broadcasting. The next battle will be telephony vs broadcasting vs Cable TV.

Telephony was beaten by broadcasting in the first round for two reasons. Firstly, the product differentiation between videotex and teletext was small. Secondly, teletext was cheaper in both acquisition costs by a large margin and in running costs which are zero. As a result, Prestel was denigrated by innumerable instant pundits.

A more objective assessment might highlight the embryonic nature of the market that Prestel was addressing. Since that battle, the British home has been penetrated by personal computers which will build a base of potential educated users and Prestel has switched-on to the need to market its merchandise.

It is of course now apparent that Prestel was the U.K's first value added network. Unfortunately, the term had not come into common usage when Prestel began. Prestel was also the U.K's first large scale electronic publisher but no one then knew anything about electronic publishing. Even today the subject is in its infancy.

Prestel was designed as an information system that could be used by anyone who could operate a domestic television. The threshold age for using a television is generally considered to be four years old. Anyone who has ventured into any kind of computing, from mainframes to personals, will know that they are all distinctly unfriendly to the unfamiliar. Prestel isn't. It was the first successful implementation of a universally applicable man-machine interface - another phrase only recently discovered and a subject soon to become a new science. Prestel is brilliant because it is simple.

It is rather difficult to be both simple and sophisticated. The structure of the Prestel database with its straight-forward tree shape imposes some restrictions on how it is used in practice. It also invites the disapproval of those who are used to contemporary computer database architectures. Doubtless, Prestel will improve its database architecture in due course through the updating of its operating software.

The use of Prestel as electronic publishing and as a value added telecommunications service is likely to continue and to develop. With some 250,000 pages of information Prestel has obvious strengths as a publisher. The information that it holds,

provided in the main by independent information providers, can be rapidly updated and quickly disseminated both nationally and internationally. The problem in offering a service that is both economic to the user and profitable for the supplier and distributor lies in competing effectively with other types of media.

Media marketing is a well-established technique. We are 500 years on from the printing revolution, sixty years on from public service radio, and over 30 years into the widespread use of television and computers. The new electronic media, of which Prestel and other types of videotex are but one example, conform to the older rules of format, content and audience focus. By its nature Prestel is a textually-oriented media. Graphics are still somewhat limited, pictures are non-existent. It has to live with text. That immediately limits its market. A secondary limitation is the number of words on a page. With only 960 character positions, more than 50 words on a page makes it look cluttered. It is therefore in the short message business. That isn't necessarily a major problem. The advertising industry has the same limitation and manages to thrive.

Short messages bring to mind news, weather, travel information, sports scores and information listings of various kinds as general services. Prestel has these in abundance but so too has teletext. Prestel scores over teletext because it has more pages and so it can carry houses, jobs and classified advertising. But these are not great money spinners unless an additional service can be added. This is where the interactive capability begins to score. Information can not only be received but also messages can be sent requesting brochures, catalogues or even interviews. This feature is obviously perceived as useful and valuable.

A further feature is to send a message not merely to an information provider but to go through an electronic gateway to complete a transaction. Now the product differentiation begins to make marketing sense. Prestel has teleshopping, telebanking, telebooking and teleordering. It also has a general purpose messaging service and even a telex capability.

The move from the perception of Prestel as a public service to a product has come about because of the marketing of what it can do rather than how it works. It has shifted from "Gee Whiz" to Cost/Benefit. Products such as 'Citiservice', 'Micronet 800', 'Viewtel' and 'Homelink' are now promoted in their own right - just as one would do with any value added network service. And behind these publicly accessible services are several thousand private services restricted to closed user groups. These are the new media's equivalent to printed catalogues, newsletters and memos. Prestel is one of the cheapest ways of nationwide publishing of short, time-critical messages to a discrete audience.

It is hardly surprising that commerce and industry have been attracted to these services and facilities. Some 75% of the users of Prestel are commercial rather than domestic and in the

short term the mix is unlikely to change. The most successful information providers to the public at large are 'Micronet 800' for computer buffs, the 'Viewtel' electronic newspaper, various magazine-style publications and the holiday and travel companies. The future is likely to see the growth in more publication products.

The telecommunications possibilities particularly for transaction processing are encouraging. Messaging is a little problematical in that Prestel is in competition with other BT services such as BT Gold - the nationwide messaging service. But there can be no doubt that the gateway philosophy of enabling Prestel users to connect through to other computer-based telecommunciations services will open large new markets.

Prestel pioneered the videotex concept and thereby created a videotex industry. The industry saw beyond the public service and took the concept into private systems for private businesses. In so doing it re-wrote most of the rules for videotex. Videotex was not invented by the computer industry. This may be one of its great strengths but in marketing terms it has been a weakness.

Computer usage in business is largely controlled by people with long experience and much technical expertise in handling large expensive computer systems. To them, videotex was either a toy or a threat. It was a toy in that the technology seemed rather trivial or a threat in the sense that it provided a cheap, effective and very attractive (to the actual operators) method of teleprocessing that could undermine their chosen strategies and prior commitments.

Some of those who identified it as a toy tried to emulate a videotex system on their mainframe computers and had a rather unpleasant surprise in finding that the handling of large numbers of videotex terminals (which are slow, asynchronous devices) is much more difficult than they had imagined.

Others who felt threatened tried to down it with faint praise or torpedo it with incompatibilities with the integrated corporate information processing domain. As always, there were the brave and bold who, strangely enough, seemed to inhabit the more successful businesses and who saw videotex as a powerful tool that could be used to advantage. They went forth and used it, often with devastating effect.

The essence of private videotex (as apposed to Prestel videotex) is that the attractions of the Man Machine Interface are retained but the database structure and network telecommunications capabilities are much enhanced. The result is an enormously potent communications system. Accessing the database through words rather than numbers (known as key-word search) is common. Accessing records from many different keys (multi-key access) is possible. Pages on some systems can be created dynamically rather than just be static as on Prestel. There are many other technical differences.

The astute business people saw videotex as a weapon that could be used against their competitors. Their logic flowed in this way: videotex was the first, new, universally applicable, participative communications technique since the invention of the telephone; 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 supply), a price war (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 private videotex system was launched in March 1980 and headlined as a system that "would impact trading position". Needless to say there were not a few people who thought it was somewhat arrogant to make such a claim. By 1981 however the great videotex wars had begun.

The first industry to succumb was the holiday tours business. It is a 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 travel 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, semi-conductors and the like. Here it was being used by a service industry.

The next 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. All of the major manufacturers are doing it. Probably those that don't will suffer badly. These systems allow customers to locate a vehicle anywhere in the U.K. 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 a thing of the past.

And so it continues. The insurance industry is the next battleground. Pharmaceuticals and Tobacco are limbering up. Agricultural chemicals are smouldering. Semi-conductors are well on the way. Where there is competition, increasingly there will be videotex.

The reason is so 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. The terminals used on all these private systems are Prestel compatible. The terminal user thus gets the choice

from a myriad collection of information services.

Videotex is not solely used as a competitive weapon. It is also used internally within companies for numerous applications some of which are similar on both public and private videotex. Messaging is one of the common uses. Electronic mail is alive and very well on videotex.

One of the most fascinating uses is in the field of videotex-assisted learning (known as VAL). A common thread that runs through all videotex usage is the attractive Man Machine Interface and its universal applicability. Computer-based training (CBT) is a big subject that is out of context in this paper. Suffice to say however that computer-based training can provide tutorial instruction of a very high standard to a student.

Some three years ago, a major clearing bank investigated the use of computer-based training as a substitute or a supplement to its classroom training for its largely clerical workforce. Many different kinds of CBT were reviewed. The bank needed something that literally any member of staff could use and would be happy using.

Eventually videotex was identified as the most appropriate medium. In many ways that was the easiest part of the task. No-one had ever taught through videotex. Its strengths and weaknesses as a communicating medium were largely unknown. Its impact on the cognitive processes was unknown. The methodology for assimilating videotex into the curriculum, supporting it with other media, pacing the student through the computer, counselling the student, and evaluating the results were other unknowns. To compound all these difficulties, the ideal place where the learning needed to be done was in the student's branch rather than in the training school.

To attempt a distributed learning system with new, untried technology - as videotex was at that time - was truly a decision that only the 'brave and bold' could take, because, even after the most painstaking feasibility study, the unknowns not only outnumbered the knowns but also even if the unknowns were resolved, there could be no certainty that the overall approach was viable. The teachers would have to develop their own authoring techniques as well as new teaching techniques.

Needless to say, the project was carefully planned, slowly and cautiously implemented and the feedback systems were diligently monitored and the necessary changes were applied. The project was undertaken totally by the bank's own teaching staff. The full story of the project is worth a book that hopefully someone will eventually write.

Suffice to say, that after three years, some 1,000 courses have been given to students. Over 100 branches of the bank have VAL terminals that are in constant use. And the students prefer the terminals to the training school.

The standard of training has improved. The cost of training has been reduced. And a British bank has probably created a new sector of the CBT industry.

These uses of videotex illustrate the breadth of application of the technology. In spite of all of the pioneering of the last few years, the technology is in its infancy. We do not have enough knowledge to scope its full potential.

The pioneering continues on many fronts. Prestel adds new facilities and develops new marketing approaches. Prestel Information Providers and "productising" their offerings. Private videotex suppliers are extending the boundaries of the technology and innovative customers are trying totally new applications.

Because of other developments - value added networks, Man Machine Interface (Alvey/Esprit), electronic publishing, electronic mail, personal computers, cable TV - we are beginning to understand the power and potential of videotex, and to see them in context.

We are not alone in the U.K. in coming to realise that videotex has universal applicability. The U.S., after a slow start, has taken some of the lessons we have learned and is now applying them. W. Germany and France are also fast progressing.

There can be little doubt that in videotex and its continuing developments we have not only a new way of providing a source of information but also a new way of communicating.

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