It began as an idea...

'A new medium is never an addition to an old one, nor does it leave the old one in peace.'

Marshall McLuhan

Simple ideas are usually the best. As a rule of thumb it seems to ensure that what might be feasible is also practical. Of course the idea must be thought of first, and that is perhaps the hardest part.

Still, ideas have a habit of coming suddenly and unexpectedly, even though, with hindsight, their appearance follows a natural progression. And often the most fertile and valuable innovations arise when two or more different ideas are combined for the first time.

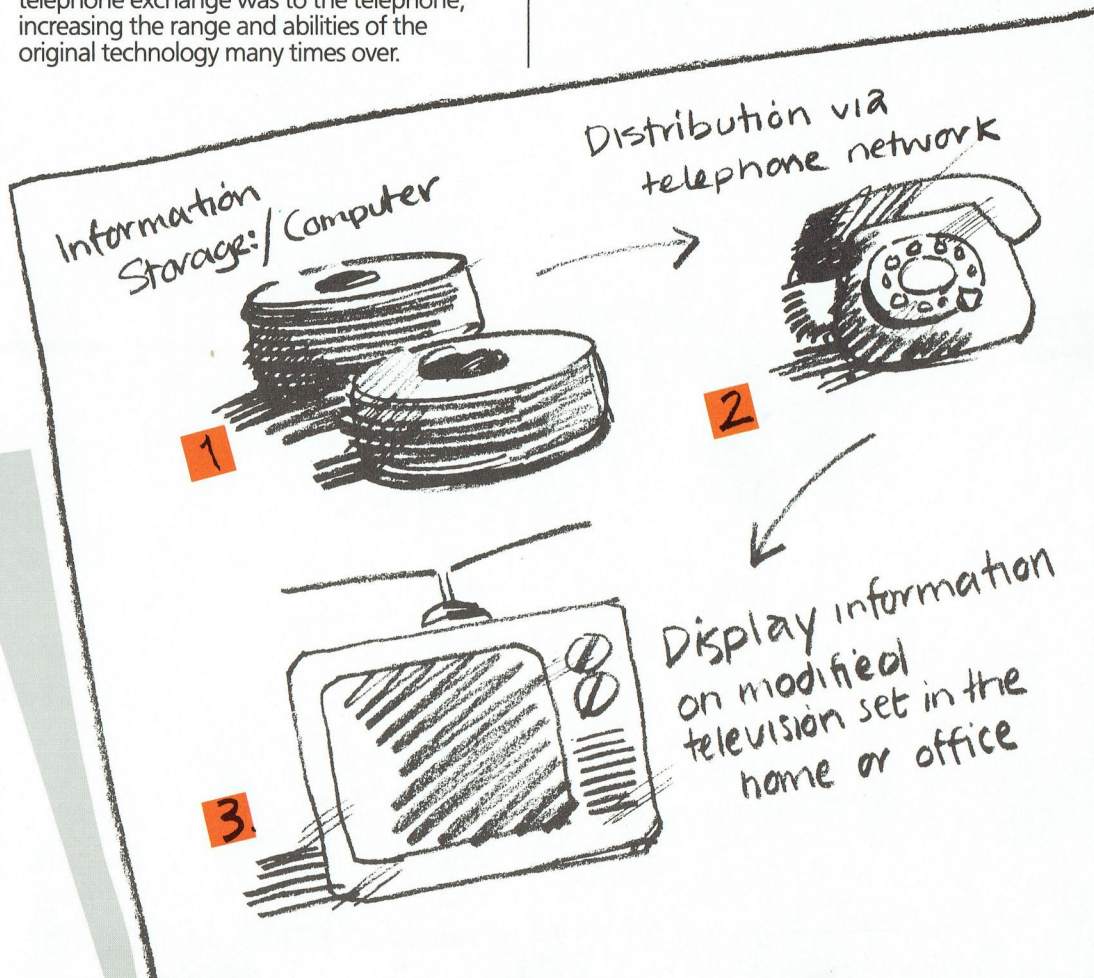
Thus it was, in 1974, that a man working for the British Post Office fell upon his great idea. The man was Sam Fedida, then the Manager, Computer Applications, in their Research Laboratories. His concept was the linking of three already well-established technologies of television, computer and telephone into a new tool, now known by the generic term of VIDEOTEX.

Videotex is a computer-based information retrieval service which uses a central computer to store, the existing telephone network to distribute, and modified television sets to display pages of information selected for viewing.

Videotex is also a two-way or interactive system, for, apart from purely retrieving information, a large range of other transactions are possible. These include purchasing goods, booking travel and accommodation, sending messages and transferring money, all from the comfort of our own homes.

To put it into perspective, videotex is to the technologies that spawned it as the telephone exchange was to the telephone, increasing the range and abilities of the original technology many times over.

But more than that, Sam Fedida's idea of videotex is synergic–that is, the combined effects of the three technologies have far exceeded the sum of their individual effects. By joining them together he did not invent a new technology, rather he created a flexible system which is seemingly limited only by what we will allow it to do.

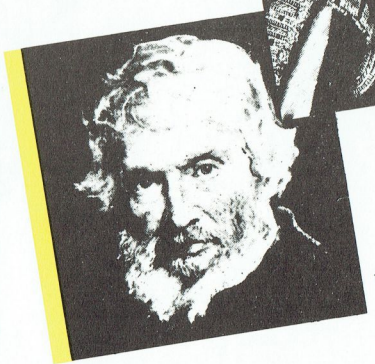


The basis for change.

'It is well to observe the force and virtue and consequence of discoveries'...

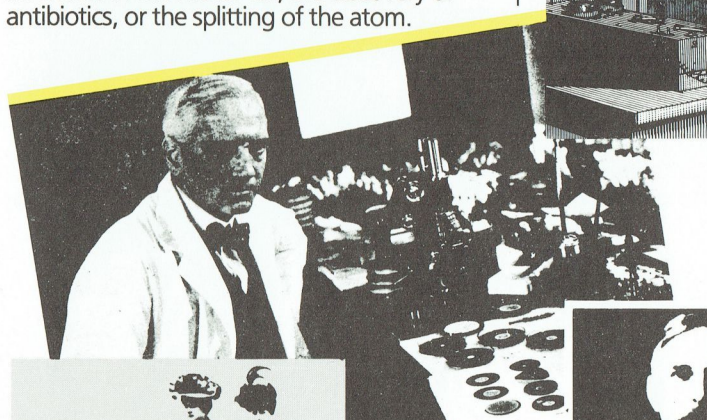
So wrote the 17th century scholar Francis Bacon. Writing in Latin, the discoveries he was discussing were printing, gunpowder and the compass. Some two hundred years later the historian Thomas Carlyle was to select printing, gunpowder and the Protestant religion as the innovations he felt had had an important role in changing society.

Francis Bacon (1561-1626)



Thomas Carlyle (1795-1881)

Today, with the help of a more modern perspective, we can add further examples to the elements that have contributed to major economic and social change, such as the invention of the motor car, the discovery of antibiotics, or the splitting of the atom.



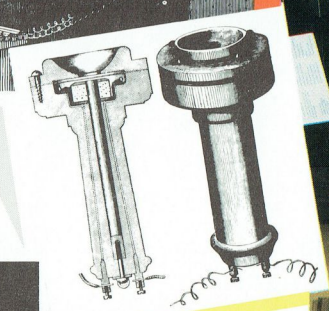
Daimler's first motor-car

Sir Alexander Fleming, the discoverer of penicillin

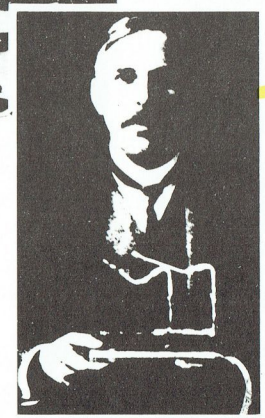
Historians like to codify man's technological progress into eras such as The Stone Age, The Bronze Age, and The Agricultural and Industrial Revolutions.

Today it seems to be accepted that, yet again, we are in an age of great and accelerated change. This time, however, scientists and commentators are labelling it the 'Information Revolution'–a post Industrial Revolution era where the changes are in our vastly increased ability to amass, store, retrieve and distribute information at incredible speeds to millions of people.

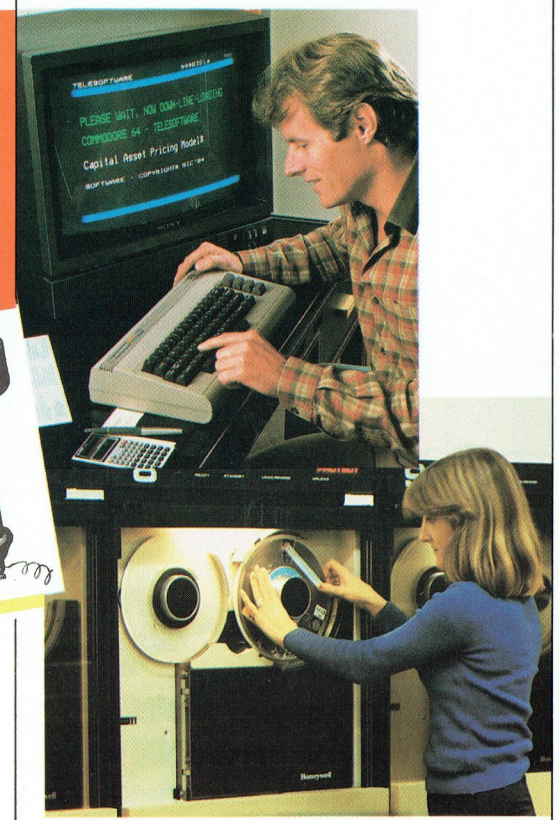
Three key elements of this new information technology are the telephone, television, and the computer.



Section and exterior view of Bell's handset



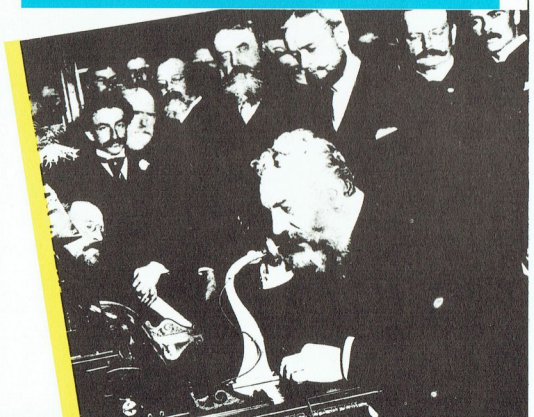
Lord Rutherford, first man to break the nucleus of an atom



Telecom Australia

The telephone

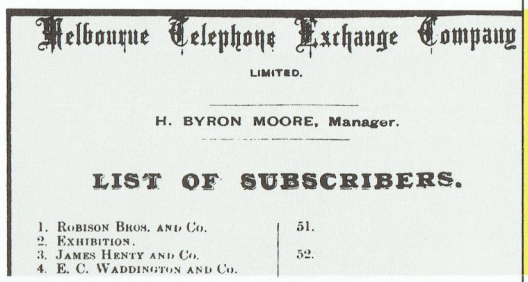
'Although there is a great field for the telephone in the immediate present, I believe there is still greater in the future.'



Those words were written in 1878 by the Scottish-born speech therapist Alexander Graham Bell, now better known for his invention of the telephone. Remarkably, his words remain true today as proof of the vitality of his original invention, for the telephone still has as great a potential ahead of it as it had when first invented.

However, that potential was slow to be realised. Seen originally as a new-fangled electrical toy, it took some years before the public at large could be persuaded to have his invention installed into their homes. Indeed, in the early days the British Post Office received complaints that the telephone was an invasion of privacy, to which they responded with the now quaint reply 'have your butler answer it.'

When the telephone system was introduced to Australia, with the opening of our first telephone exchange in Melbourne's Collins Street in 1880, there were only 43 subscribers, almost entirely made up of business houses. As was the experience in other countries, the promoter of the exchange here in Australia had a heartbreaking task persuading people of the now obvious uses of the telephone.



Melbourne Telephone Exchange Company

LIMITED.

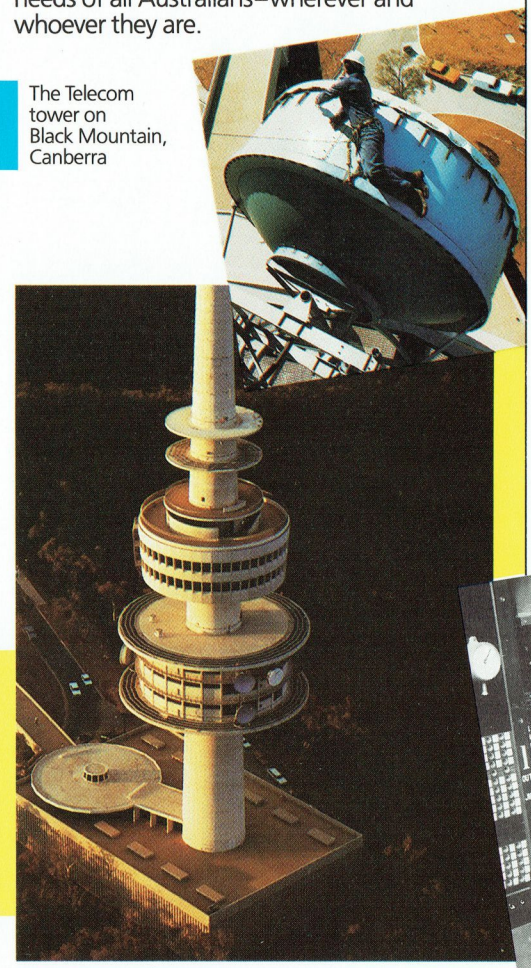
H. BYRON MOORE, Manager.

LIST OF SUBSCRIBERS.

1. Robison Bros. and Co.	51.
2. Exhibition.	
3. James Henty and Co.	52.
4. E. C. Waddington and Co.	

Now, just over a hundred years later, the telephone is taken for granted in every developed country, and is made more conspicuous by its absence, or when it breaks down. The telephone has become an essential part of the fabric of social and business life.

Today, Telecom Australia has almost 9,700 million dollars invested in the Australian telecommunications network. Those assets serve the modern and varying communication needs of all Australians–wherever and whoever they are.



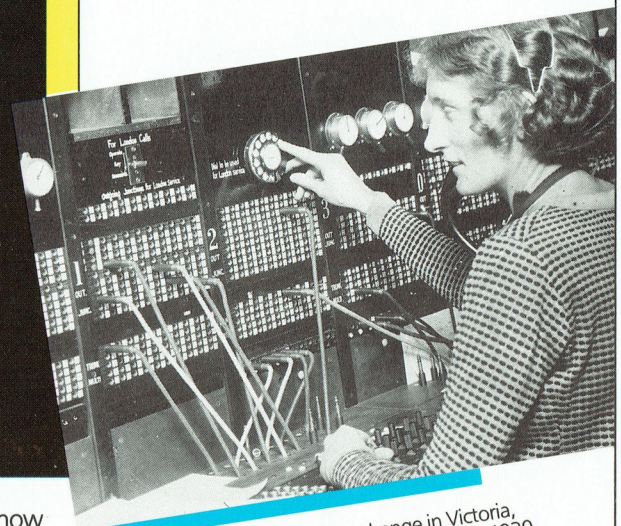
The Telecom tower on Black Mountain, Canberra

Those first 43 telephone customers have now grown in number to well in excess of 5 million, using over 8 million telephones to make some 6,400 million local and trunk calls each year.

The network, which in 1880 went only from Melbourne to Ascot Vale (some 5 kilometres), now stretches, in its various forms, for over 38 million kilometres around Australia.

Dialling the world is also no longer a novelty. Since Australia's first overseas telephone call in 1930, between Melbourne and London, we now make some 18 million telephone calls overseas each year. The world which Australians ring has now a staggering 500,000 million telephones, giving a ratio of almost 12 telephones for every 100 people on the globe.

Bell must have known, or at least been able to imagine, the effect of his invention, but perhaps even he could not have foreseen that the Australia he visited in 1910 would today have telephones in more than 90 percent of its homes.



A telephonist at the Windsor exchange in Victoria, connecting Australia's first ever overseas call in 1930

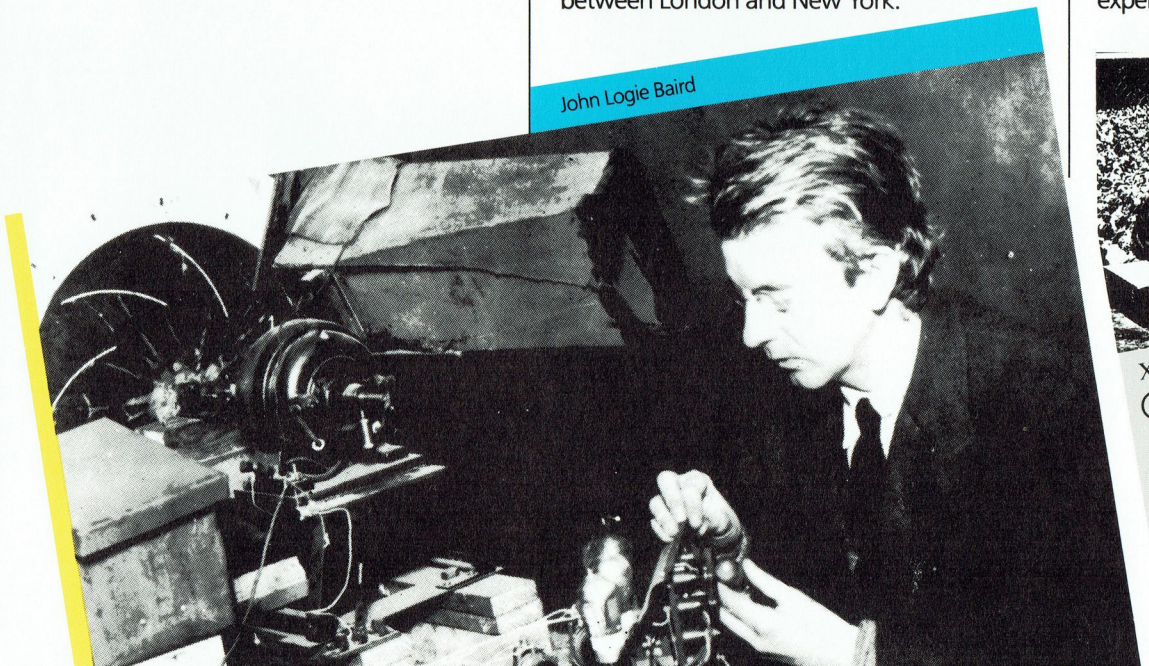
Television

'Television? The word is half Latin and half Greek. No good can come of it.'

Television may well have been a strange word to the ears of the English journalist and newspaper editor, C. P. Scott. It would have seemed even stranger to the President of the Roentgen Society, Alan Archibald Campbell Swinton, who in 1911 presented a paper on what he called 'Distant Electric Vision'.

And a vision it truly was, for Swinton was a man before his time. His idea, to all intents and purposes, was the system of television in use today, but in 1911 the technology had yet to catch up. Because of that, much of the limelight has gone to John Logie Baird as the inventor of the television, even though the system we have today is not his.

Baird's largely mechanical system was soon to be outmoded by technological developments, but not before he was able to demonstrate, in 1928, both colour and stereoscopic television, as well as the first transatlantic transmission, between London and New York.



John Logie Baird

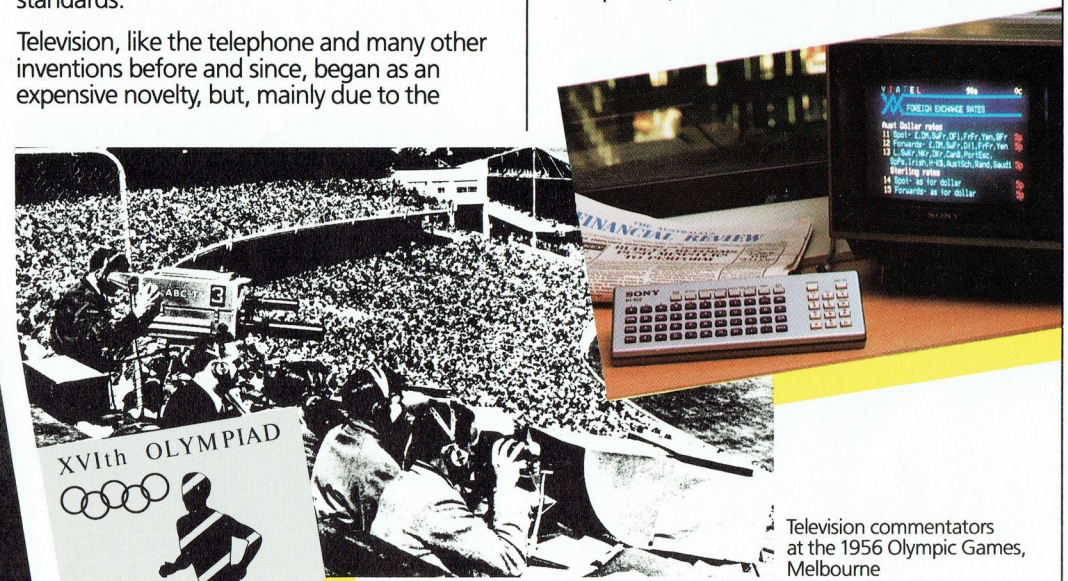
Using the EMI/Marconi Company's 405 line system, the world's first public television service was introduced by the British Broadcasting Corporation in 1936. The first Australian television service began on 16 September 1956 with TCN 9 in Sydney the first channel on air. In the same year HSV 7 in Melbourne, and two national stations, ABN 2 Sydney and ABV 2 Melbourne, also began transmissions.

However, following on a great deal of background technical and research work by the then Postmaster General's Department, the Australian transmission standard was set at 625 lines. Compared with the British, using 405 lines, and the Americans, using 525 lines, Australia then led the world in television standards.

Television, like the telephone and many other inventions before and since, began as an expensive novelty, but, mainly due to the popularity of the 1956 Melbourne Olympic Games, it was soon on a firm footing. Indeed, television grew at a faster rate initially in Australia than either Britain or America. Some 81 per cent of Australians had television within the first 10 years, compared with 44 per cent in Britain and 79 per cent in America.

Further advances were made when, originally only transmitting in black and white, colour was introduced to television in 1975.

Since its introduction the cost of buying a television set has fallen dramatically, and today some 97 per cent of Australian homes have a television set. The popularity of television, together with the availability of the telephone were now ready to combine with a third factor, computers, to set the scene for videotex.



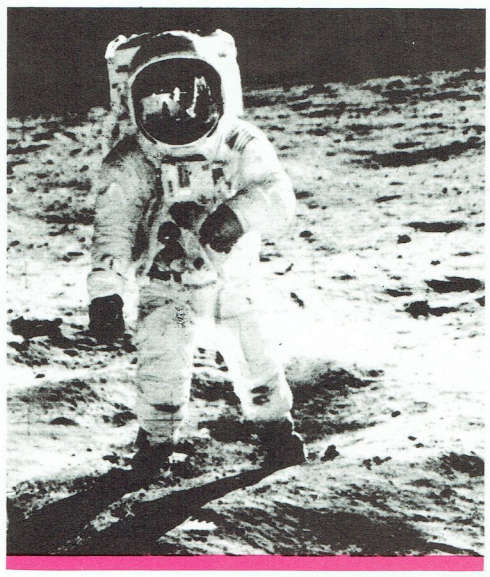
Television commentators at the 1956 Olympic Games, Melbourne

Telecom Australia

Computers

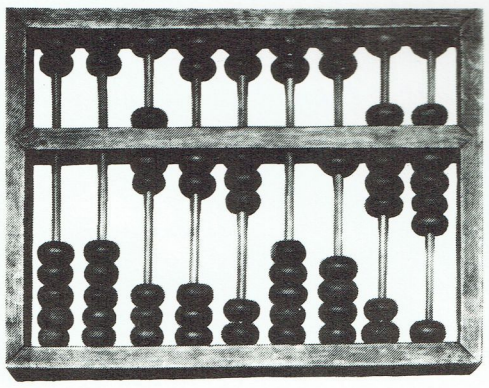
The inventions of the telephone and television have been responsible for many changes to society that we know today, but it is the computer that is set to alter it almost beyond recognition. Both feared and welcomed, the computer has effected many changes to the way we go about our daily life, and will continue to do so as its technology and efficiency increases.

Without the ability of computers to handle vast quantities of complex calculations it is doubtful whether man would have stood on the moon. Without computers, many of the business transactions and telecommunication facilities we already take for granted would not be possible.

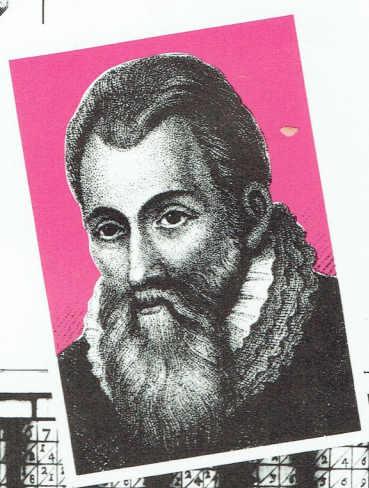


Today the word computer is almost only used to mean an electronic machine capable of carrying out mathematical calculations under instruction. Once the word meant only a person who carried out such calculations, when, a century ago, young men were employed as 'computers' in banks and in astronomical observatories.

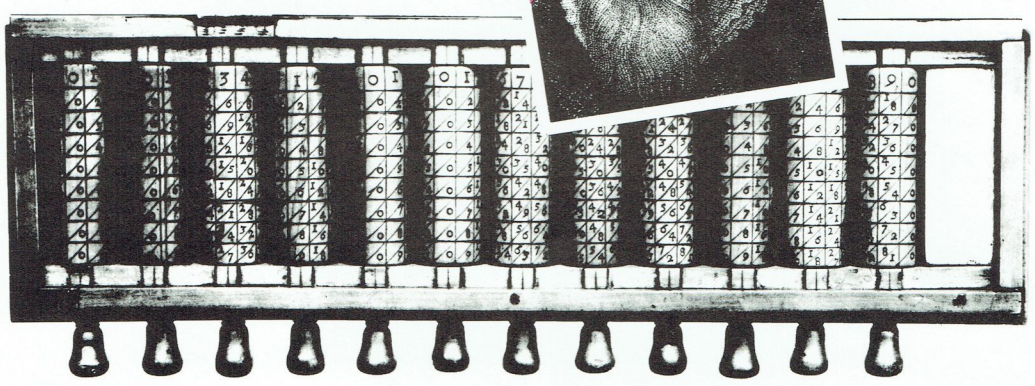
Carrying out repetitious arithmetic tasks is, however, a boring job subject to error, and it is not surprising that efforts were made to replace the human with the automatic computer. Aids to calculations are almost as old as civilisation itself, and were a constant aim of human endeavour.

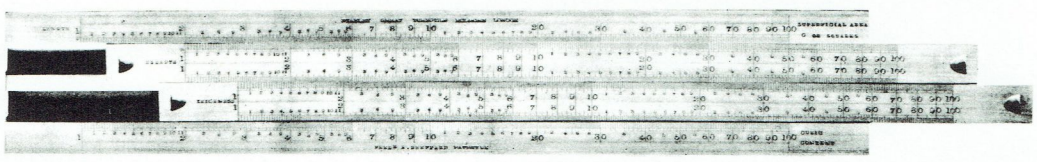


For example, the abacus, a series of parallel wires or rods strung with beads and used for complex arithmetic calculations, is over three thousand years old, and is still used today in some Asian countries. More sophisticated devices for solving mathematical problems began to appear in the 17th century with such things as John Napier's 'Bones' and William Oughtred's slide rule.



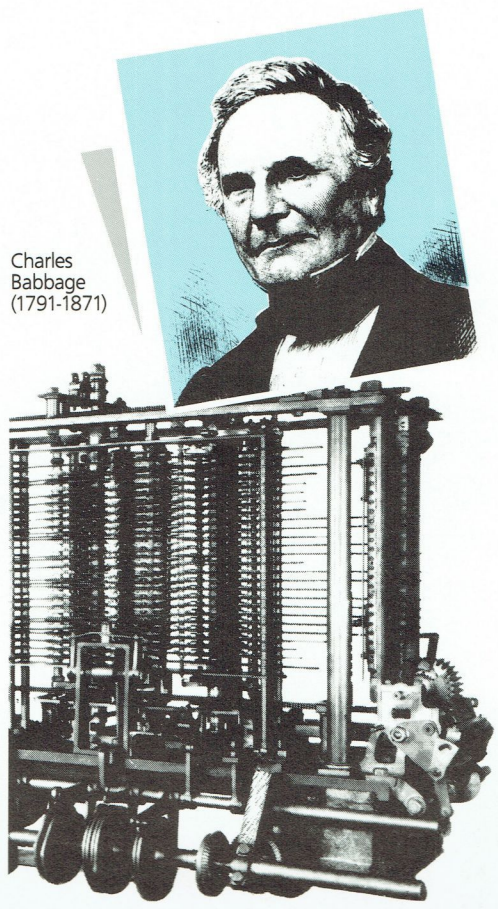
John Napier (1550-1617) and his 'Bones'





An early slide rule

The first attempts to build a machine capable of carrying out a whole series of sums under instruction were, however, made by Charles Babbage (1791-1871) in England. He designed, but never completed, two kinds of calculating machines which he called the Difference Engine and the Analytical Engine.



Charles Babbage (1791-1871)

The Babbage Analytical Engine

The Analytical Engine was the true forerunner of today's electronic computers, though it was to work entirely by mechanical means using gears and cogs. It was to have been capable of carrying out any kind of calculation whatsoever, following instructions given to it ('or programming') in the form of a series of punched cards.

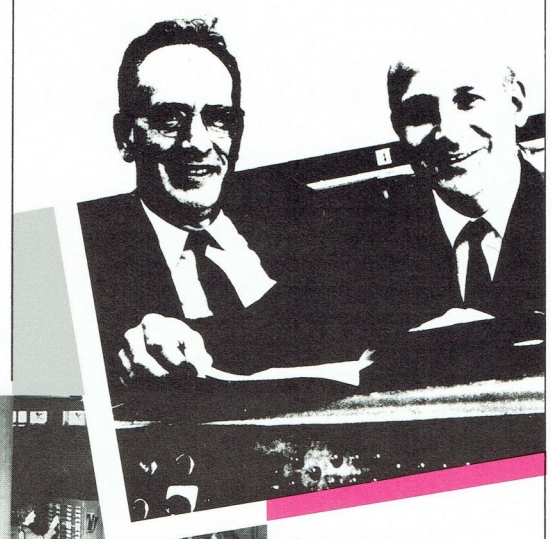
But Babbage's ideas, like those of Swinton with television, were too far ahead of the times. His unfinished machine is now preserved in London's Science Museum, whilst Babbage, the 'grandfather' of the modern computer, spent his later years trying, unsuccessfully, to produce an infallible system for winning at horse races.

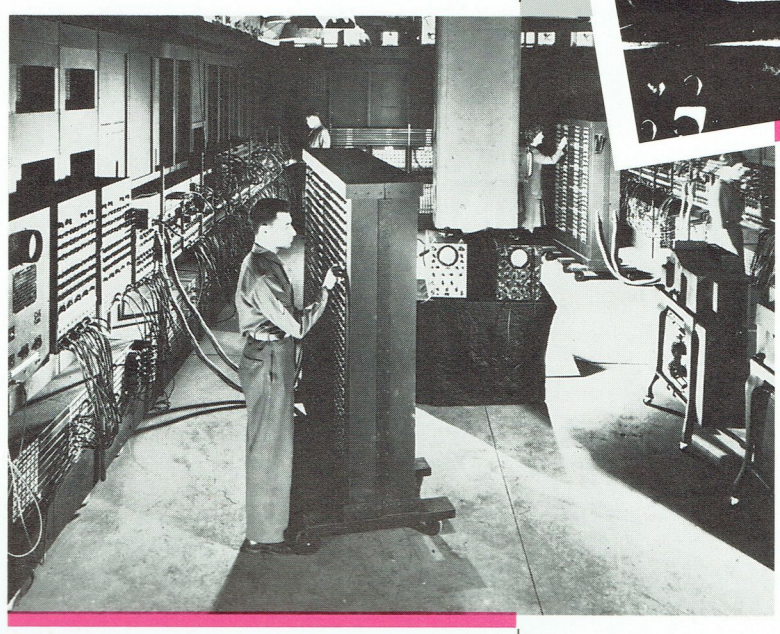
The first true computers had to wait until the middle of our century before they became technically feasible. Controversy still reigns over who actually invented the modern electronic computer, but it was the advent of the Second World War that provided a boost to research into that field.

In Britain, a team led by Dr Tommy Flowers, an engineer in the British Post Office's Research Department, had, by 1943, designed and produced a computer called COLOSSUS. Used to successfully crack the German code known as 'Enigma', it stretched across seven equipment racks and contained 2,400 valves. It was Britain's first electronic program-controlled digital computer.

In America, following on the early work of the Iowa physicist Dr John V. Atanasoff, two scientists at the University of Pennsylvania, Dr John W. Mauchly and Dr J. Presper Eckert built, in 1946, a machine they called ENIAC (short for Electronic Numerical Integrator And Calculator).

Dr John W Mauchly and Dr J Presper Eckert

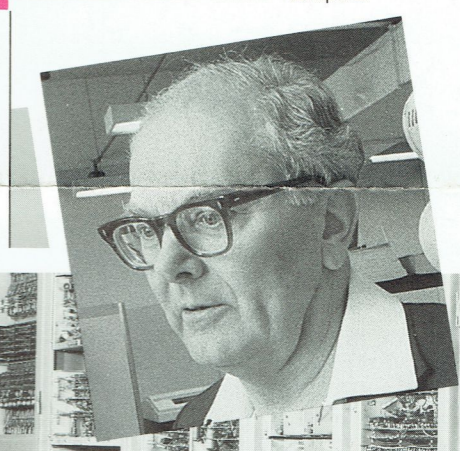


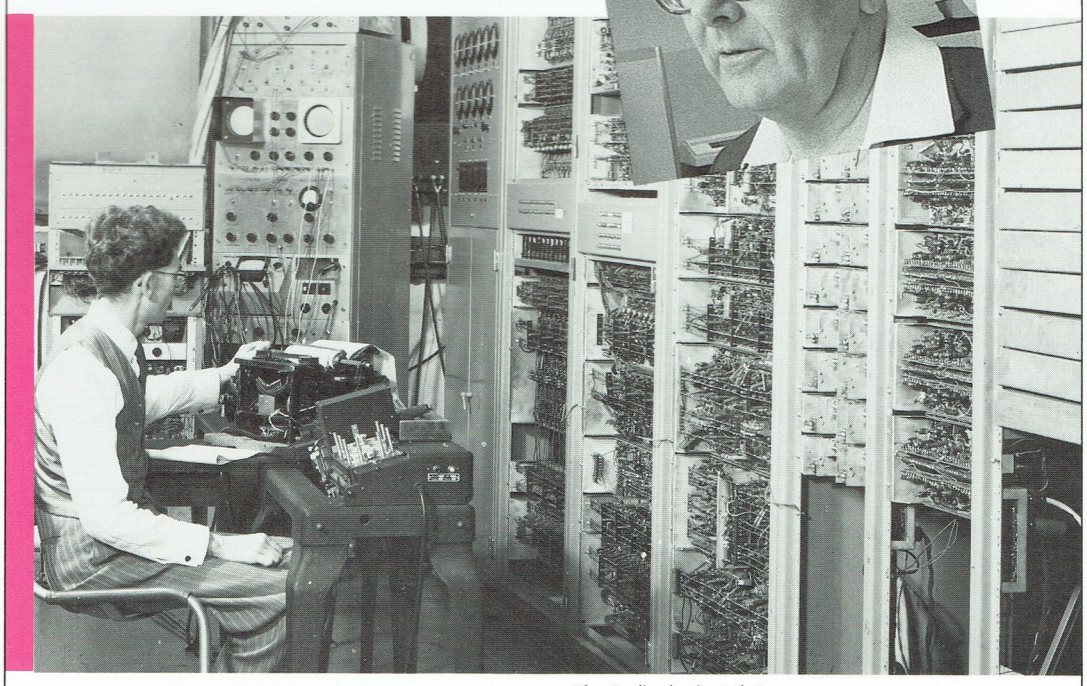


The ENIAC computer built in 1946

Dr Trevor Pearcey, designer of Australia's first computer

Their computer weighed almost 30 tonnes and drew so much power that the lights of West Philadelphia dimmed whenever it was switched on. Containing some 18,000 valves, it was designed to calculate, among other things, the trajectories of shells, and was later used to aid in the design of the hydrogen bomb.



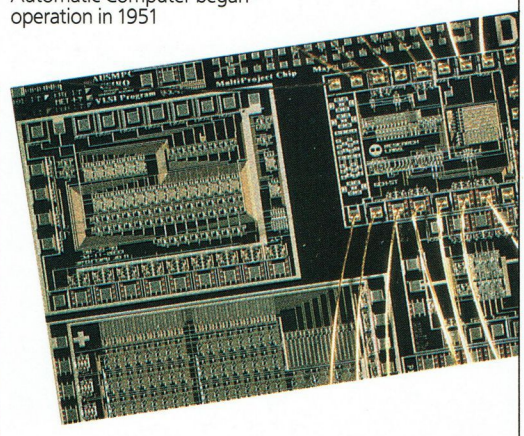


The Radiophysics Mk 1 Automatic Computer began operation in 1951

Work on Australia's first electronic computer began in 1947 with the efforts of Dr Trevor Pearcey and his colleague, Maston Beard, at the CSIRO's Division of Radiophysics. Their finished product, the Radiophysics Mk 1 Automatic Computer, as it was then known, began operation in 1951–in time for the first Australian Computing Conference–and was used by radiophysicists, the CSIRO and outside authorities like the Snowy Mountains Authority. Transferred to Melbourne University in 1956 and renamed CSIRAC, the computer was used by the Australian scientific community in general until finally being 'retired' to the Science Museum in 1964.

Since then, computers have become far more powerful, smaller and cheaper, and have already found their way into our homes in the form of electronic games, home computers and as controllers of home appliances.

This has been brought about by the technology of the semiconductor integrated circuit or microchip, which has formed the cornerstone or building block of the information revolution. Rendering valves obsolete, the transistor, and later the microchip have allowed for huge reductions in the size of computers.

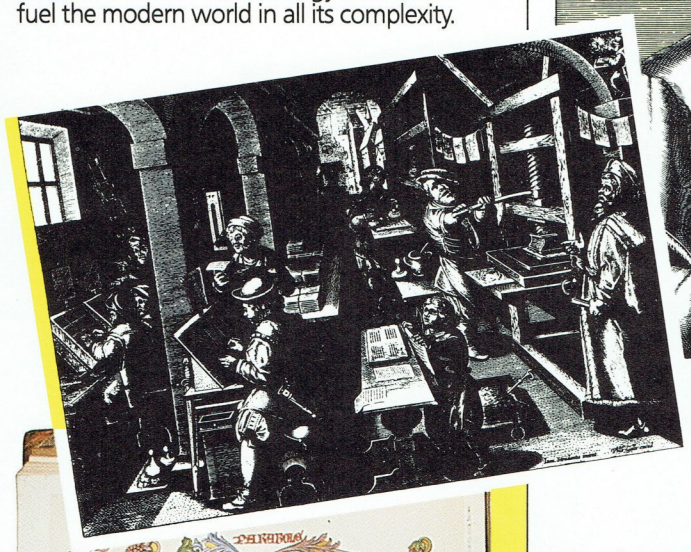


Advances in this technology have been, and are, extremely rapid, especially in the terms of the number of circuit elements contained in a single chip, which can already contain more than 100,000 elements. It means that today it is possible to buy a programmable computer which will fit into a pocket.

Videotex is only one part of, but in future could well act as a focus for, the revolution in computer based information handling in the home.

Computer convergence

Five centuries ago a German, Johann Gutenberg, invented printing using movable type cast from molten lead, and in 1454 produced the world's first printed book–three hundred copies of the so called Gutenberg Bible. His invention was to cause a mediaeval 'Information Revolution', when printing became the crucial technology that was to fuel the modern world in all its complexity.



Johann Gutenberg (1400-1468) the inventor of printing from movable type

Gutenberg's Bible

Printing, being an easier and faster way to reproduce, find, store and spread ideas, was to be the cause of major cultural and economic changes to society. By 1500, for example, there were already up to nine million printed copies of thirty thousand different works in print.

Expressed in modern terms, printing opened up the 'data bases' of the multinational corporations of the time, by giving more people readier access to information previously contained in the then handwritten libraries of the monasteries and abbeys.

Computers today are about to have the same effect, particularly when they are linked to telecommunications. That process is known by the term 'computer convergence', where information in all its forms (such as voice, text or pictures) is stored, transmitted and accessed by digital means–that is, by computers talking to other computers via computer controlled telecommunications facilities.

Printing is now almost too expensive for the spreading, too bulky for the storage, and too difficult for the finding of information. For many of today's information needs, it is nearly obsolete.

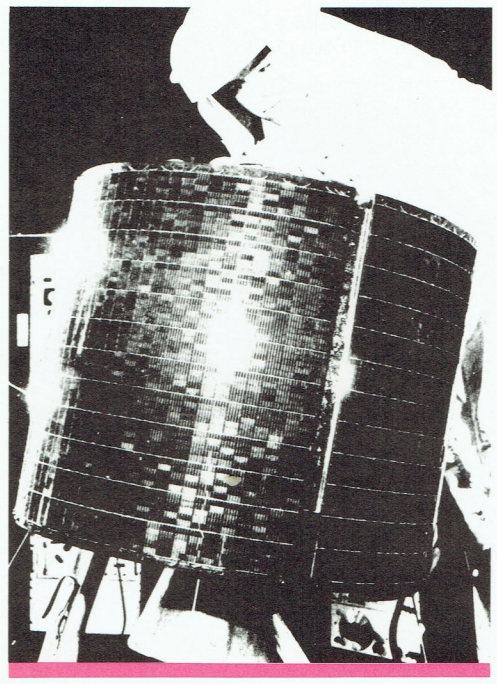
The magnetic memory of only one computer disk pack can store some 20 million words, which in a library would take up many metres of shelf space. Not only that, but with modern telecommunications those 20 million words can be remotely and easily accessed by anyone with the proper computer link.

The phenomenon of computer convergence in the new information technology is best seen in newspapers. During the 1970s, newspaper newsrooms throughout America began installing Video Display Terminals (VDTs), radically changing the roles of journalists and print staff alike.

Reporters write and correct their stories on VDTs, and once edited, a keyboard command is given so that a computer drives phototype-setting equipment to put the story in type. Typewriters have disappeared from many newsrooms, where, before printing, the only copy of a story exists merely in the memory of a computer.

One example of this is the Los Angeles Times, where their system has 341 VDTs and 12 computers, with an additional 94 terminals located up to 4,800 kilometres away. Personnel can communicate to all parts of the system (which also includes a 120,000 word computerised dictionary) at a rate of up to 9,600 words per minute.

Adding to the communications possibilities for newspapers are space satellites.



Intelsat 1 (Early Bird), The world's first commercial communications satellite

A bank of computer disk drive units, enabling huge amounts of data to be stored off-line

The New York based Wall Street Journal has already pioneered the transmission of entire editions by satellite to printing sites throughout America.

It is now possible to eliminate hard copy newspapers, and, in the future, to substitute electronic newspapers on home television terminals, an idea made feasible by videotex.

With such modern mediums and technologies, such as videotex and its broadcast version, teletex, these computer systems are causing a revolution in the spreading of information, ideas and entertainment. Newspapers, highlighted above, are but one part of that information revolution.

The computer based revolution is happening in other countries also. In Britain, the famous Oxford English Dictionary has been rendered into electronic type. Its 13 volumes and 16,750 pages have been computerised, which will not only make the job of rewriting it easier, but will also put it 'on line' to computer screens the world over.


THE AGE

Tuesday 12 June 1984 250 Spencer St., Melbourne, 60 0421 (Classified 60 0611) 42 Pages 130th Year 30c

er siege, but to the children it means victory

TONY WALKER in Basra

WANTED TO BUY YOUR HOUSE TO SELL Warne E. Wilson

The Courier

117th Year of Publication 25 cents

BALLARAT, FRIDAY, JUNE 8, 1984

Inside today

'Ghost town' fears for Ballarat,

In Australia, many newspapers have already introduced computer working, including not only metropolitan newspapers, such as 'The Age', but also country papers, such as 'The Ballarat Courier.'

Such bodies as governments, universities and the larger business houses have also already made much use of computers and computer links. Their use has perhaps been most evident in the world of banking, travel, and libraries.

What makes the phenomenon of computer convergence feasible is the fact that telecommunication facilities are not only controlled by, but also have been adapted to, computers. Modern telephone exchanges are nothing more than large computers, handling the transmission and routing of communication traffic, of which the normal telephone conversation is but one, though still the dominant, aspect.

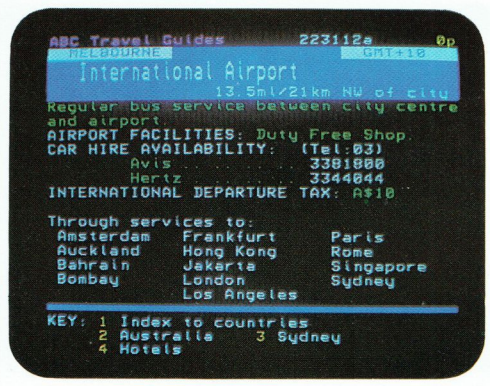
In the modern business world, data or non-voice communication links have become vital. Such links are a growing part of the Australian telecommunications network.

A telex machine, one form of non-verbal communications over the telecommunications network

What will unify data links with voice communications is the use of digital transmission systems.

A signal, transmitted by whatever means (such as optical fibre, copper wire, or microwave) will be sent in a digital form. In such a way, voice, pictures or text will become indistinguishable from each other, being universally represented by a series of fast moving binary dots instantly recognisable by a computer. The only difference, if any, will now be only in the speed of transmission. (For further information, see Telecom's Information Kit No 1–From Dots to Data, The Story of Digital Transmission and Data Communication.)

With the advent of videotex, however, it is becoming possible for everyone to have the same facility to find, control and use information in their own home. In other words, it will bring to the general public what has previously tended to be more the preserve of larger private organisations–information.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2 Australia 3 Sydney

4 Hotels

However, the normal telephone line, when connected to the videotex system, will be the means of allowing the person at home to tap into the computer world outside, and will allow him or her to become part of it, in a way not possible before.

Telecom Australia

Now what is videotex?

'Information is wealth; rapid and wide access to information is power.'

Peter Large, The Guardian

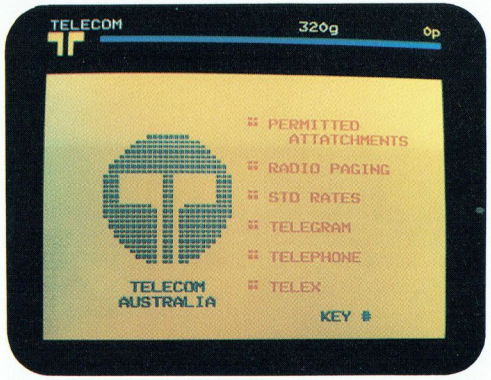
Made possible by the convergence of television, telecommunications and computers, videotex is the generic name for services which will disseminate information by electronic means.

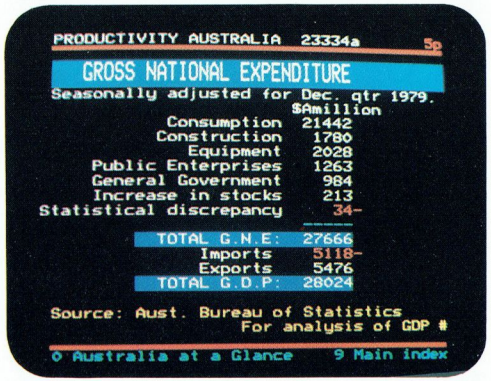
That information, which can be textual and/or graphical, or pictorial, is displayed on suitably adapted television sets or on low cost visual display terminals.

It is a user-friendly system, in that it can be used and easily understood by those untrained in the field of computers.

Videotex is capable of providing, for all members of the community, immediate and up-to-date information on such topics as news, weather, sport, travel and holiday facilities, but can cover a potentially unlimited range of subjects.

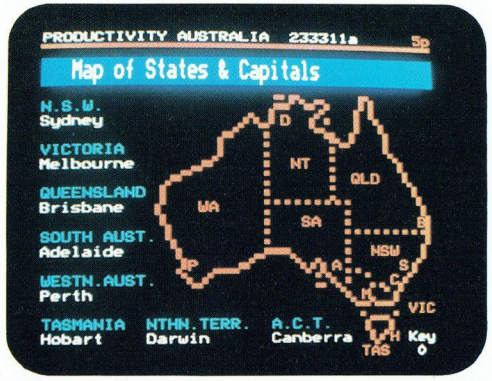
It will provide not only information, but will also allow for a large range of other, interactive, activities. Travel reservations can be made, shopping can be done and goods bought, messages can be sent and received, banking and money transactions effected, financial analyses worked out, and computer games played, either from the home or office.





Many of the services offered by videotex can already be provided and obtained separately by other means, such as newspapers, radio, the postal service and cheque accounts. What makes videotex new and unique is that the immediate availability on demand and in combination of such services cannot be achieved through any other technology or medium. And using videotex, that information can also be constantly and instantly updated.

It is already being widely used in the business environment. However, its range of services



and the key elements of low cost, user-friendliness, together with the fact that it can be easily installed in the home using technologies already in widespread use, make it available and attractive to the whole of society.

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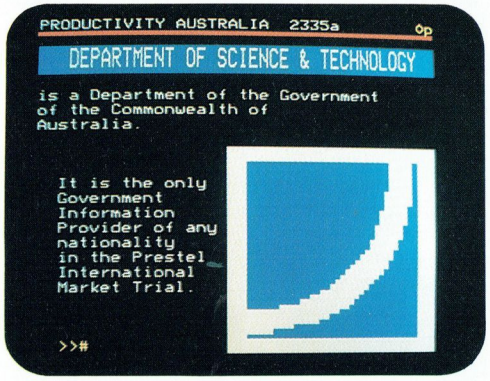


Teletext

Videotex has a companion technology, known as TELETEXT. It is a non-interactive one-way system which broadcasts information simultaneously with normal programmes. Operated by television stations and not by Telecom Australia, it has been in service for a number of years in Australia for the transmission of news and sporting results. Another form is SUPERTEXT, the method by which captions are provided for people who are deaf or who have hearing impairments.

And how then does it work?

The user's basic equipment need only be a television set, an adaptor with a keypad, and a telephone line.

The adaptor

The adaptor may be built into the television set at the time of manufacture or supplied separately. With it, the television set, connected directly into the telephone network via the normal telephone socket, can act as a videotex terminal.

The adaptor performs many vital functions.

It includes a modem to link the television set via the telephone network to the computer, and an encoder/decoder to translate the signals from the computer onto the screen. It also includes a terminal auto-identifier to ensure only authorised access and to facilitate billing, and an auto-dialler to automatically dial the computer, as well as a control unit to co-ordinate the functions of the terminal itself.

The keypad

The user will have access to, and control of, the system by means of a keyboard or handheld keypad. With the keypad, the user will be able to 'talk' to the computer at the rate of 75 bits per second, a speed that is faster than most people can achieve when typing. The data and information is then received from the computer at a rate of 1200 bits per second, a speed that fills the screen in less than seven seconds.

The numeric keypad controls are similar to the 12 buttons of a Touchfone, with buttons marked 0 to 9, plus a hash and star buttons. An alpha-numeric keyboard (with numbers and letters of the alphabet) is also available for the entering of textual transactions such as electronic mail and funds transfer. Further, extended facilities, such as local data storage and printouts are also possible.

The telephone

Between the videotex terminal and the computer is the public telephone network, which will enable the user to be connected, via the switching and billing facility known as a 'gateway' to the videotex data bases. The gateway facility will not only give the user access to Telecom's data base, but will also provide a link, via Telecom Australia's packet switching service, 'AUSTPAC', to third party or external data bases.

Using the Overseas Telecommunications Commission's international data transmission service, 'MIDAS', access can be had to compatible public videotex systems and computer data bases overseas.

Information providers

The information available from the videotex computers is compiled by 'Information Providers', who are persons or organisations responsible for entering and maintaining information on the data bases.

Apart from individual information providers, there will also be scope for what are termed 'umbrella information providers'. These are firms who are able to arrange, insert and update information on the videotex service for individuals and smaller organisations who lack the equipment or technical expertise to do it themselves.

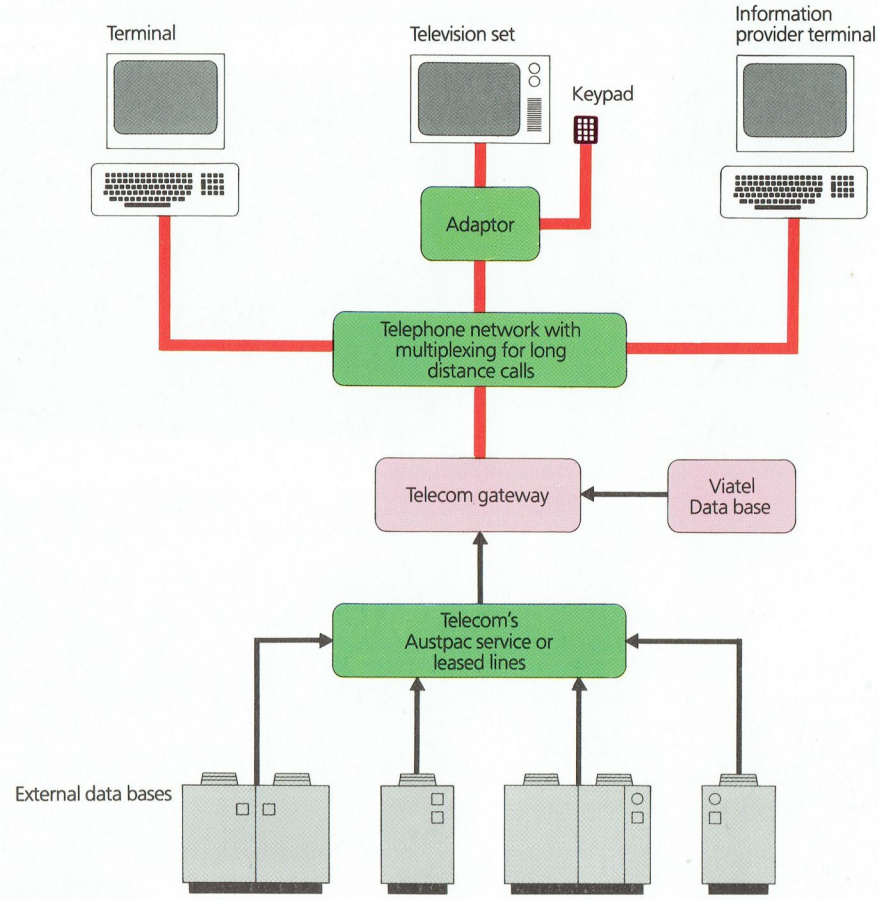
The information within the data base is arranged, not as in a book, but in a tree or inverted pyramid format, so that as each page of information displayed on screen, further, more specific pages can be chosen. The choices become more and more specialised, until the viewer reaches the page which is of most value.

As an example, the viewer might select the restaurant guide, and then select a more precise guide to restaurants in his or her suburb, and then select a guide to Chinese restaurants in that suburb.

In the case of cinemas, as another example, it will soon be possible to not only remotely choose the film to see and the cinema to be visited, but the ticket can be booked, paid for, and the viewer's bank account altered accordingly, all from home via the videotex terminal. The same will be true of shopping.

The screen

The information on the videotex screen can be made up of words, numbers, diagrams, graphics and still pictures, or a combination of all or some of them. Colours and tones are also possible. The basic tool, however, is a series of small mosaic squares, rather like tiles or building blocks, arranged on screen to form a graphic display to supplement the normal text.



Videotex in Australia

Although Australia will not have a public videotex service until early in 1985, videotex is not new to this country.

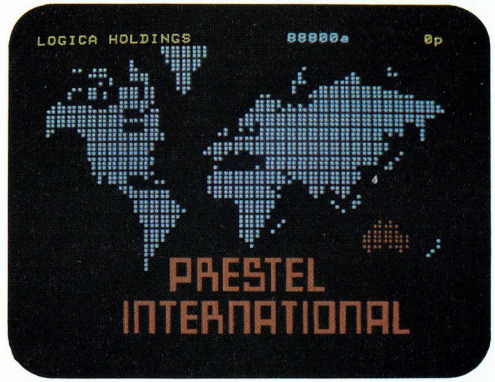
From the time of the initial developments in Britain in the late 1970s, Telecom Australia had taken an interest in the commercial and technical aspects of videotex. By 1980, it had established a Videotex Task Force, to formulate detailed proposals for the introduction of a public videotex service in Australia. In the same year, working examples of videotex terminals had been on public display in Australia for the first time.

Much interest was shown in this new information tool by some of the major Australian business houses, such as Myer Emporium Ltd, the David Syme group, and ICL, to name but a few. Already, an Australian Videotex Industry has been formed as a prelude to, and vehicle for, the setting of industry standards in videotex.

Videotex has also been operating in Australia for some time, with what are called 'closed user groups', that is, a private network of videotex terminals, with the service only accessible to subscribers to that network. One of the first in operation, in early 1982, was the AGTEX information service operated by the Victorian Department of Agriculture. It was a private videotex network based on the videotex system set up by Control Data and Computer Power.

Such closed user group videotex services will be of enormous use to a variety of businesses, such as the stock market, commodity brokers, travel agencies–people who need up to date market information at their fingertips.

However, for videotex to become a success, there was still a need for a co-ordinated public and national service, and it is here that Telecom Australia's role principally lies.



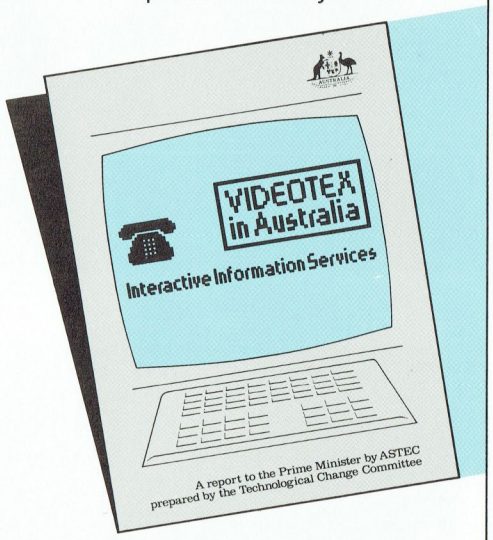
agtex
Agriculture on-line

Videotex and Telecom Australia

In late 1983 the Minister for Communications, Mr Michael Duffy, announced that he had given approval to Telecom Australia to establish a national videotex service.

This had followed on strong industry support, particularly from the recently formed Australian Videotex Industry Association, for Telecom to provide a national and public videotex service. Behind this was the desire to provide efficient low-cost access to such a service via the already existing telephone network.

This move had also been supported by the Australian Science and Technology Council (ASTEC) in its 1983 report 'Videotex in Australia', which had been tabled in Parliament in September of that year.



In establishing a national videotex service, Telecom will be providing a service that will be complementary in some ways to existing and proposed videotex services. These may be accessed either through Telecom's 'gateway' facility, a sort of computerised traffic controller, which allows public access to further external data bases provided by other information providers, or through the public telephone or packet switching networks.

Telecom's role is in the operating of the main public data base and videotex computer, as well as providing links with that computer from the videotex terminals based around the country via the telephone and data networks. The information itself will come from private information providers, who are individually responsible for the content and preparation of their material.

Telecom will not be an information provider, except for providing information on its own services and products. However, Telecom will provide a videotex directory showing the information available on screen, and in the future may well place telephone directories on videotex.

The provision and use of the videotex service will, of course, attract various charges to both user and information provider. Telecom will therefore provide a centralised billing facility, to enable the user and the information provider to be correctly charged for the uses made of the service.

The Telecom national videotex service will be known as VIATEL, and will support terminals and data bases meeting the British PRESTEL videotex software standard. It will be capable of interconnecting with other data bases that may be introduced into Australia.

Telecom's role, therefore, is to provide a low cost public videotex service available to all who wish it, and to engineer a basic framework around which other, private, systems can be built.

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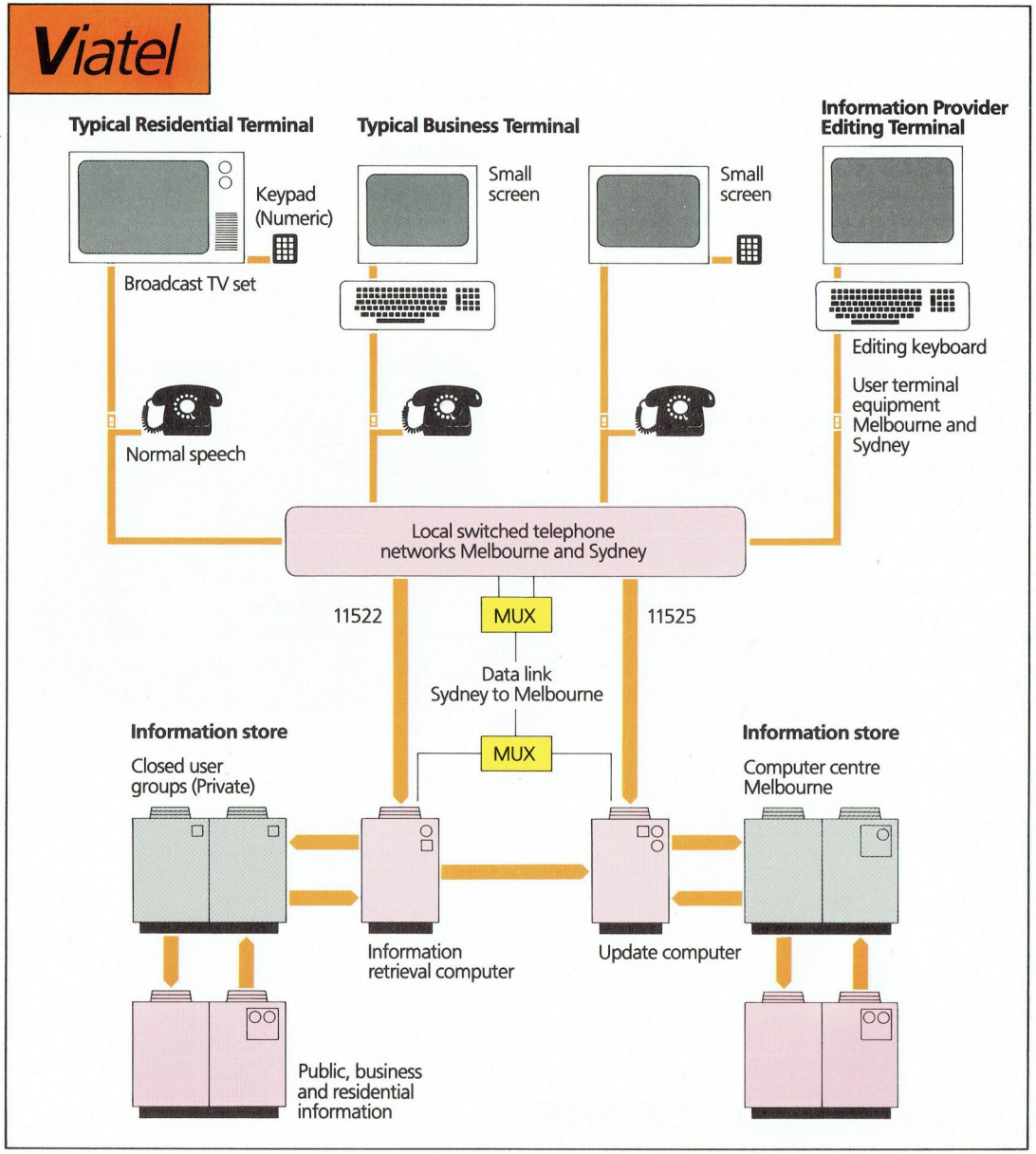

Videotex, the overseas experience

Videotex is now in service, or planned, in many countries around the world. The first country to have a public videotex service was Britain, where their PRESTEL service, which began in 1979, now contains some 300,000 pages of information, with over 30,000 terminals in operation.

The PRESTEL system is also in use in Austria, Belgium, Hong Kong, Italy, the Netherlands and Switzerland, and has been adapted for use in Denmark, Finland, Norway, Spain, Sweden and now Australia.

Other countries have different systems. The Canadian Department of Communications has developed a system known as TELIDON, which began in 1981 in Canada and parts of America, and which, extended and modified, has been incorporated into the 'North American Presentation Level Protocol Syntax' (NAPLPS).

In France the TELETEL videotex system and the associated electronic telephone directory service had, by April 1983, over 70,000 terminals connected to the service.

West Germany is using the newly developed European standard CEPT, which incorporates features of PRESTEL and TELETEL in its public videotex system known as BILDSCHIRMTEXT, which began in September 1983 and which aims to have a million users by the end of 1986.

Like Australia, the West German and the French videotex also have a gateway facility, and it is intended that, with the use of the European CEPT standard, the service be compatible with, and accessible by, other European systems.

In America, there are now about 20 uncoordinated public videotex trials or services underway using various systems and software including TELIDON, PRESTEL and TELETEL.

The American National Standards Institute (ANSI) has now officially adopted the NAPLPS as its videotex standard. With its parallel adoption by the Canadian National Standards Bureau, NAPLPS is now the single North American videotex standard.

There is, however, no national videotex service as yet, specifically because, in the large US market, each information provider tends also to be the service provider.

Videotex, the future

Videotex has only been around for less than a decade, and already it is in use in a majority of the countries of the Western world. It is still, however, in its infancy, and only when the service has been accepted by the public, as opposed to business, will we begin to see the effects it will undoubtedly have on society.

Videotex appears destined to change the way we learn, work, communicate and amuse ourselves, particularly when it becomes as common as the telephone in our living room, or the car in our garage.

It appears likely that videotex could evolve into a global information and communication network, and, in the long term, will be one of the means of lowering some of the barriers between races, by increasing knowledge of other cultures, and ultimately by crossing the language barrier.

You may care to think about the ways it could alter your life or that of your family, both in the short and the long term. How would you use it if you had one today, and how might you use it as its range of information and communication services gradually extend? How might its range of services be extended, and what form will videotex take in a hundred years time?

One major, and more immediate, change may well come about as more and more people are given the ability to work almost entirely from home. Something may then be lost when we do not have the necessary interaction with colleagues in the office, but this will perhaps be compensated by increased leisure hours.

On its own, videotex, and developments of it, will certainly change society, but society in the 'Information Age' is undergoing changes with or without videotex. It is only a small part of the information revolution, but one that the average person can easily tailor to his own specific needs.

The future is, after all, what we make it, and with tools like videotex, we should ultimately have far more personal control over our own destinies.

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