VOL 4 • NO 2
NOVEMBER 95

The magazine of Museums Australia Inc.

MUSEUM NATIONAL

ASSOCIATION NEWS

This past year has seen the impact of *Creative Nation* on the arts industry. The document is often quoted and remains a statement about the importance our national government places on the health of the arts industries generally, and on their capacity to engender a more profound and relevant sense of Australian identity.
Museums are, however, hardly mentioned in *Creative Nation,* which is surprising given the depth of the creative energy that galvanises museum programs today and the fact that museums, through considered use of the new technologies, are poised to enter the most productive and creative period in their role in Australia's history.

Multimedia is with us and is an ongoing challenge to the museum industry. Our task is to represent excellence in both collecting heritage and communicating the significance of that to our growing audience. Education plays a central role in museums and the use and development of multimedia is critical.

In partnership with ICOM Australia, Museums Australia, is to host the next International Council of Museums Triennial Conference in Melbourne in 1998. This is a very exciting event. Hundreds of museum professionals from all over the world will gather in one place to communicate ideas and generate activities that reflect the breadth of the interests and influence of the wider museum community. Much work has been done already by ICOM Australia.
The Board of ICOM Australia is chaired by the Hon. John Button. A Local Planning Group has been formed in Melbourne and is currently conducting information sessions. As well, the Department of Communication and the Arts has invited funding proposals from ICOM Australia. So far the Commonwealth has promised $100,000 to the event and the Victorian State Government has promised $250,000. For further information about ICOM contact Anthea Hancock at the Museum of Victoria on (03) 9651 6783. The museum is generously supporting administrative work in the early stages of planning.

Through The Heritage Collections Committee (HCC), the Department of Communications and the Arts and Museums Australia have allocated $1.5m to two major projects, the development of a national database and the conservation projects. Major museums in the states have subscribed $600,000, the Commonwealth Government $750,000, and the state arts ministries $150,000 to the HCC's work. *The National Conservation and Preservation Policy for Movable Cultural Heritage* was successfully launched in Launceston on 9 October.

The appointment of directors to major posts in the museum community remains a sensitive issue across Australia. The recent debacle at the National Gallery of Australia is a case in point. Clearly, procedures need to be transparent and individuals must feel confident that their applications remain confidential and are processed professionally. While the public is entitled to be informed a balance between communication through the press and confidentiality (and proper process) must be retained. Anything that suggests confusion or manipulation discredits the government, individuals involved and the industry. This of course profoundly affects the public's perception of the professionalism of the industry.

Museums Australia extends its sincere congratulations to Chris Saines, Manager, Curatorial Services, Queensland Art Gallery and Conference Coordinator, Museums Australia Conference 1995, on his appointment as Director, Auckland City Art Gallery. Chris is a professional who has been a strong advocate for the museum profession and Museums Australia. He will take considerable expertise and experience to his new post. We wish him well and look forward to working with him in his new role.

Des Griffin
President

This issue...
This issue of *Museum National* looks at the impact of multimedia on information and communication in museums. The editorial committee invited a number of authors to contribute articles with the intention of providing a balanced analysis of the constraints posed by this fast-evolving technology, and the opportunities it provides for Australia's large and small museums.
The committee's brief asked authors to look beyond the multimedia product and to discuss the underpinning issues: Is multimedia a panacea or just another tool useful only when directed at collection management and interpretation, and only when combined with creativity and scholarship? What do the new technologies mean for Australia's museum professionals and the programs they manage? What do they mean for people who visit museums?
This themed issue will hopefully act as a catalyst for future issues in which we will review and discuss specific programs, CD-ROMs and case studies. Our thanks go to Martin Hallett (MoV) and Euan McGillivray (MoV – Scienceworks), who have acted as advisers for this special issue.

Linda Richardson
Editor

MUSEUM NATIONAL is the quarterly publication of Museums Australia Inc. This project has been assisted by the Commonwealth Government through the Australia Council, its arts funding and advisory body, and the Department for Communication and the Arts.

Print Post Publication No:
332582/00001
ISSN 1038-1694

Contributions and correspondence
Museum National welcomes unsolicited letters, articles and photographs for consideration. Articles should include brief biographical information about the author and photographs should be clearly captioned and credited. *Museum National* reserves the right to edit, abridge, alter or reject any material.

The support of all advertisers is welcomed. Publication of an advertisement does not imply endorsement by Museums Australia Inc., its affiliates or employees.

All correspondence to:
The Editor, *Museum National*
24 Queens Parade
North Fitzroy Vic 3068
Telephone: (03) 9486 3399
International: + 61 3 9486 3399
Facsmilie: (03) 9486 3788

Copy deadlines for 1996
1 Dec – Feb issue; 25 March – May issue; 24 June – Aug issue; 17 Sept – Nov issue.

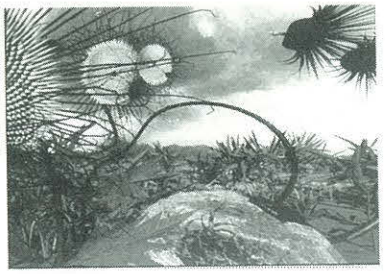
Editorial Committee
Gina Drummond, Rose Lang, Ian Watts, Kenneth Park, Linda Richardson, Margaret Birtley (Chair), David Demant, Linda Young.
Advisers: Martin Hallett, Euan McGillivray

Production
Editor: Linda Richardson

Subscriptions
Subscription to *Museum National* is a membership service of Museums Australia Inc. Single issues are also available.

Printed by:
Publications Department, WA Museum
1 Francis Street, Perth, 6000.
Tel: (09) 427 2779
Fax: (09) 227 9989

Original cover design:
Tony Mammoliti



Front Cover:

Turbulence: An Interactive Museum of Unnatural History, (still, detail), by Jon McCormack. 'Turbulence is an interactive laserdisc installation that explores a menagerie of digitally synthesised ecologies. By abstracting the processes of natural evolution, strange new interpretations of life are evolved within the virtual space of the computer: a process dubbed "Artificial Life". These artificial organisms are not designed by the artist, but evolve through an interactive process with the machine.' Turbulence was recently shown at the Ian Potter Gallery, The University of Melbourne Museum of Art.

Museums Australia Inc

Australia Council for the Arts

AUSTRALIA

DEPARTMENT OF COMMUNICATIONS AND THE ARTS

Museum National aims to present news and opinions and to encourage debate on issues of museum practice within art, history and science museums, including the business of the association as appropriate. It seeks to represent the diverse functions and interests of the many institutions and individuals who comprise Australia's museum community. *Museum National* is published quarterly by Museums Australia Inc., and provides a major link between the association and its membership. Policy and content are directed by an editorial committee. Contributions from those involved or interested in museums and galleries are welcome.

MUSEUM NATIONAL

VOL 4 • NO 2 NOVEMBER 95

CONTENTS

INFORMATION TECHNOLOGY

Bound for Binary Bay – Colonising the New World

by Ian McFadyen

This is an abstract of Ian McFadyen's paper delivered at Arts Victoria's June 1995 conference New Technologies and the Arts. Copies of the complete text are available from Museums Australia.

At this moment a process is happening. The process is the digitisation of the entire output of the human race. Gradually, every symphony ever composed, every book ever written, every map ever drawn is being translated into a digital format.

To our knowledge human beings are the only creatures who can store cognitive information outside their brains. The problem with most external storage methods, however, is that they still rely on the permanence of storage materials. However, digitised information is no longer reliant on any particular storage medium because it means translating the novel, painting, symphony or three-dimensional form into a mathematical expression – a sequence of ones and zeros. Once translated, that sequence can be stored in a great number of ways, copied from one medium to another with no appreciable degradation of information, moved quickly from place to place, and multiple copies can co-exist in different sites. This implies that from this point on, information is potentially immortal as well as immutable.

There are two further implications of digitisation:

Access – Theoretically, anyone can access any digitised information at any time; we are not limited by the books in our local library or the paintings in our local gallery.

You might say Microsoft Art Gallery is no substitute for standing in front of Rembrandt's *Night Watch*, but in the 21st century the technology will be such that you will be able to have the experience of actually standing in the museum looking at the painting.

Having access to so much material also implies a reduction in the importance of **mass** media. The mass media serve up a small number of items to a vast number of people simultaneously: it has imposed a sameness on us. Pay TV will begin the disintegration of this synchronicity of experience, which will be further dispelled by video on demand and a host of other information services. To help people find their way through the cybersphere, service providers will have to organise all this material, much as retailers have to organise huge department stores: ground floor – news, current affairs, gossip, sport etc.

Process – The paradox of digital media is that while it is theoretically indestructible, it is also completely malleable. All digital material is compatible with all other digital material. Paintings are photographed and music is recorded, but a photograph and an audio cassette are materially different and cannot be combined. Digital material can. This means that a student writing an essay can download reference material onto the computer, cut out quotes and paste them into the essay, clip a picture from a file, copy music from another and put it all together in a multimedia assignment.

New Technologies and the Arts

The new technologies will have an enormous impact on most of the arts as we know them.

The impact on music is already widely appreciated, since it was the first of the traditional arts to be computerised. The same technology is now moving into film and television. Cameras can now record video directly onto a computer hard disk which is then docked into a computer, the vision is edited like a word processing document and put to air. Videotape does not enter the picture.

In the movies, special effects are being generated in computers and in the 21st century filmmakers will be able to design complete actors in the computer. However, the real revolution for cinema lies in the creation of interactive movies: if you create a three-dimensional actor you will probably want to create the environment as well.

Architectural firms can now construct a model of a building in the computer, colour it, light it and take clients for a virtual tour of the building inspecting details before the building actually exists. If you put on a headset with a small screen in front of each eye, you can see a completely three-dimensional picture of this environment: virtual reality.

This is a gigantic breakthrough for despite all the achievements of film and cinema the medium is still limited by the fact that the audience is passive. The audience can take part in the action *emotionally*, but its participation is still purely vicarious. The audience must identify with the character, it cannot **be** the character.

In interactive movies the audience is the actor, or the interactor. The beginnings are already here with games like *Doom* (a game which is totally point of

view), and *Myst* (a game which is totally cerebral: you must solve a mystery but you don't know what the mystery is – you are the player and the protagonist in the play).

We're starting to see computer games with characters, mood, tension, music, stories – games with their own ethos. We're seeing the generation of worlds with their own individual aesthetics which involve elements of literature and art.

'But', say the pundits, 'people just want to be entertained'. Well, people want to sit and be entertained by television and videos because 100 years of cinema and television has trained them for that. Now, a new technology is creating a new generation of interactors rather than watchers. The winners in this new form will be those who devise the most stimulating interaction for their audience.

We must assume that the audiovisual quality of computers and virtual reality will improve. Screens will become huge, flat and fine grained. They will become more immersive, either by being worn as helmets or wrapped around to give an impression of a total surround screen. Audio will become fully directional. Games will get bigger, longer and more realistic. There will be exotic locations and characters you speak to, listen to, and interact with like real people. Several people will be able to share the same experience, as in *Doom*, which can be played on a network and which further changes the nature of entertainment. A movie may not be determined by the interactive movie maker alone, but something which is developed by the maker in conjunction with the audience.

With the visual arts, I can only suggest that the advent of the flat screen technology will create the most significant revolution. We are still mostly trapped in the technology of the bulky TV screen. The flat screen, which, when developed, will be wide, thin, and light enough to hang on the wall like a picture, will work as a TV, a computer screen, even a painting. Newspapers and magazines will become magazine-sized screens we can hold, books can become light paperback-size screens we can hold in one hand and scroll through the text as we read.

What of literature? Multimedia products all begin in some way as a document. The simplest form of multimedia is a document with pictures, sounds or video embedded in it. That multimedia document can become non-linear by the addition of hypertext, or text which can call up other text, pictures, sounds and movies.

For years English teachers have suffered hernias when students watch the film of a novel rather than reading the book – adapting a book to film means throwing out tons of material because films cannot deal with very much information. Interactive media may in fact liberate and stimulate the medium: multimedia authoring may see the process of simplification of novels into films reversed.

The point is, time and size are not limited on computer-based products: a digital work doesn't have to play in an hour and a half. **Computer based entertainment offers the possibility of creating literary works which more closely approximate the complexities of the real world.**

It is the ideal tool for artists who want to explore big topics. As multimedia tools become cheaper and easier to use, any potential multimedia novelist will be able to use the same computer they use to type and edit books and create multimedia works for distribution over the Internet, or however they wish.

Even literature lends itself to interaction. There are at present on the Internet a number of sites referred to as MUDS (Multi-user Dimensions) and MOOS (Multi-user Object Oriented Sites). They are simply programs running on computers which people can log onto

from around the world. MUDS and MOOS in a sense are communally written *books*. They are books about various fantastical people living in an imaginary environment. People log on and make their own contribution to the environment and the action which occurs. The *consumer* of the product helps *create* the product.

Think about visual MUDS, which exist on the Internet and in games like *Doom*. Players appear in the game as figures they have designed or chosen; they may have to learn to cooperate and communicate. The writers may not be able to predict where the players will go in this imaginary world and may in fact be only one step in front of the players, creating new worlds because someone has headed off in a new direction. So there may be a totally new form of interaction between the entertainer and the entertained, as the writer copes with unforseen developments.

We can also see the possibility of open-ended creations. The outcome of a film or novel is pre-determined and fatalistic. The story moves towards an inexorable ending in which much of the power of the work resides. The message is somewhere in the outcome. But in interactive works, the substance may be in the journey, not the outcome. The audience may choose their own outcome or there may be no ending. The game may go on and on in a game which constantly evolves.

Colonising the New World

How much of this new world will be controlled by individuals and how much by corporations? The microcomputer was created in the seventies by a small group of individuals, but is now controlled by corporations.

The Internet is like an open range system. Much of its information is either free or reasonably cheap. Corporations, however, try to build fences across open ranges and if there is a fence there has to be a gate; whoever controls the gate can regulate who goes in and out, and possibly charge a fee.

The information superhighway is not a highway. It's a vast grid, a huge network: the Internet. But a net and a highway don't look similar at all. All the messages are still on their own paths, but they're on different frequencies – parallel but separate. The bureaucratic and commercial impulse is to get people off the grid of sidestreets and onto the toll roads.

The decisions confronting policy makers in relation to digital media are the same as those concerning libraries, art galleries and playgrounds: What should be free? What should be cheap? What should be available at a market price? What should not be available at all?

The concept of ownership and privatisation is crucial. The history of political and geographical expansion is that people who go into new territories and grab vast tracts of land for themselves become the aristocracy of the next generation. Now the digital world, including the Internet, is the new frontier. Will a small number of well heeled operators again rush in and claim large amounts of territory to sell off to future generations for a profit?

People who own public galleries and libraries and other resources should think very carefully about selling the rights to digitise and then exploit those digitised versions of their works. They may not mind if Microsoft has exclusive rights to the digital version of their paintings because they have the original, but in the totally digital world the digital version will become the original.

Parents who might once have read *Aladdin* and *Snow White* to their children from a book for nothing, now buy the tapes. Thus, something once regarded as a child's birthright, the right to hear the great folk tales of the world, for free, is now something which someone has somehow ended up owning. Disney owns *Aladdin* – not the original but the only one that matters. So when a publisher or a library or a gallery sells the digital rights to a book or a painting, they should realise it will eventually become Microsoft's *Mona Lisa*, or Apogee's *Agamemnon*.

The colonisation of Australia offered quite unforeseen benefits for Europeans sent here. For generations, it has offered an egalitarian democracy where people who were hopelessly oppressed and dispossessed in their country of birth could achieve a better life, and a decent share of social equity. At the same time, Australia allowed the creation of a new ruling class: the first to come seized as much land as they could and later sold it out for a price. The extraordinary result of this is that, although the British settlers of Australia, as the Aborigines are acutely aware, paid nothing for the land, today the average Australian must spend almost their entire life paying off their own block of land.

We regard information and access to our culture and to the world's combined heritage as a natural birthright. But it will not stay that way of its own accord. As the industrial age gives way to the information age, information becomes the new commodity. As the entire heritage of the human race is absorbed into the new digital technologies, it is also being subtly but steadily privatised.

One hundred years ago Australia enacted certain fundamental guarantees which ensured a minimum equity for all members of society. Today we must revisit those guarantees. When we look into the digital territories of the 21st century and think about guarantees to protect equity, we must again ask: What should be free? What should be cheap? What should be available at a market price? What should be unavailable?

We accept that people must work to pay for food, shelter, clothing, health and entertainment. Are we soon to arrive at a world where knowledge, understanding, culture and art will only be available to those who can afford it?

Ian McFadyen
Freelance TV & multimedia writer & producer

Mistakes about Multimedia

by Professor David Sless

A bad start

I used to think multimedia was something new. The way the computer industry talked about it gave the distinct impression that here was something exciting, radical, even revolutionary; and being a researcher in visual communication and information design, I was particularly interested to read about these new developments in my field.

At the same time, I happened to be working with HyperCard, a program allowing you to create multimedia applications. But for some reason it never struck me that HyperCard was one of the programs they were talking about. The vision of an environment where you could smoothly and powerfully integrate text, video, sound and graphics seemed a long way from the clumsy limited environment that was HyperCard. I went on to use programs such as Macromedia Director, and more recently I have looked at various authoring software for the World Wide Web. It slowly dawned on me that I had been working in multimedia for a long time, but that I had just never called it that, nor did I think it was particularly new or radical, and certainly not revolutionary. Why was I so out of sync, so unexcited by this 'new' technology?

Before working with computers, I was used to working with traditional media such as print, film, video, photography, sound and theatre. I could trace the crafts and art forms from which these media arose through hundreds of years of accumulated skill and tradition. Through centuries of experimentation and thinking these new media have developed rich and elaborate methods for shaping and articulating human experience and understanding. I was simply one more worker benefiting from this rich tradition, using its many techniques in my struggle to bring coherence and sense to a small fragment of the world we live in.

The novelty of what I was working on with HyperCard – a help system for a computer program – arose because of the uniqueness of the program and a need to explain its workings as simply and elegantly as possible within the environment of the program. But the elements with which I was working – the text, graphics, layout and so on – were all familiar, and the conventions I was using were those established by designers and artists before me.

Of course, I had to learn how to use the program, but that took just a couple of days. And because of the limitations of screen resolution and programming tools, I had to use a highly compressed and simplified method of presenting explanations and examples. But beyond these constraints, there was nothing especially new. Only the subject matter and the environment presented new challenges and opportunities.

I suppose my introduction to multimedia was through the back door. I did not see it through the front door where the guests are treated to the splendour of the facade before they walk through the door.

For those who have come through the front door, the excitement is palpable. High-tech tupperware parties can be very persuasive, particularly if the implication is that anyone – regardless of training or talent – can use the new media. Moreover, when the Government pulled $80 million in subsidy – like a rabbit out of the hat – the excitement boiled over into a kind of euphoria. A whole new industry was in the making! Here was the vehicle through which the Clever Country and the Creative Nation would come together in nothing less than a Communications Revolution!

Some crude realities

The realities of creating works for the new media are rather different. Far from being the medium for everyone, multimedia is more demanding than traditional media. You still need training and talent; the artistic and design conventions developed for traditional media apply equally to the new media. You will no more become an expert multimedia producer if you learn to operate HyperCard or Macromedia Director, any more than you will become an expert book designer just by learning to operate DTP software. If you do not know the craft of making movies, sound recordings, typography, illustration or writing, you haven't got the basic skills to make multimedia applications. Simply having the tools is not enough. Moreover, multimedia creates four special demands that are not present in the traditional media.

Resolution

The resolution of text and images in multimedia systems is limited by computer screen resolution, which is below that of all traditional media, including broadcast TV. This means that the degree of artistic refinement and control needed on any screen is much greater than for other media. For example, the number of lines of text that can be comfortably read on a screen is far less than can be read on an equivalent size page. Moreover, the range of fonts and layout options is limited by certain peculiarities of screen contrast and legibility. Using advanced

techniques like anti-aliasing, which gives an impression of sharpness and depth to print, can help, but only at large font sizes. This means there has to be close integration of writing and designing of content in such a way that editing and graphic presentation go hand in hand, often with a single word or phrase being worked over many times to get the most economical fit.

Images on screen, whether still or moving, need to be much simpler than those in printed illustrations, photographs, TV or film. Far less background 'noise' or atmospheric effects are possible, and, as with text, this requires much greater artistic control. The same is true of sound.

One of the ironies, well understood by creative people, is that the simpler the effect you want to achieve artistically, the greater the refinement needed in production. What seems to a reader or viewer effortless and simple is often the result of intense and difficult refinement. Thus, in multimedia, where the resolution imposes a restriction on complexity, the 'simpler' effects require the most substantial effort.

The danger of not achieving simplicity is that the viewer will quickly become bored and irritated by the complexity. Whatever other advances are being talked about in the multimedia world, better screen resolution is not high on the agenda; the computational power and signal transmission rates needed to increase screen resolution are still a long way away. Thus, the artistic effort of coping with such low resolution will continue to require considerable and continued effort. Contrary to the sales pitch that says everyone can become a multimedia author, working with multimedia is actually more demanding than with traditional media.

Bringing it all together

The second difficulty for multimedia development is the integration of sound, movies, graphics and text. Not only do all the skills have to be there, but they have to be integrated into an artistic whole. Achieving a degree of unity and coherence across a range of media, all on a small screen, requires great ingenuity and is a talent in itself. Think of the complex production processes, involving many people and processes that go into making films or TV programs, and add an extra dimension of complexity and you have the problems of creating multimedia production of a high standard.

One-off productions, involving special grants and a great deal of enthusiasm and personal commitment, are possible. But routine productions on an economic basis are a totally different matter. Moreover, there is the underlying aesthetic and artistic problem of combining media with different traditions of narrative and style. Is the overall effect of bringing these different media together more than the mere sum of the parts? It does not automatically follow that more means better. Somehow, the final production has to offer a new type of unity and reading experience, otherwise it will fail artistically and will not attract audiences. This is one of the many challenges facing multimedia. It must evolve its own aesthetics to survive.

Australian Arts and Cultural Sites on the Internet

The Department of Communications and the Arts' (DoCA), Multimedia Development Section, together with the Media and Public Affairs Unit, has developed a new list of Australian arts and cultural sites which is now on the Internet at the department's home page.

While there are many individual sites and many may be found using Internet search engines, there is not a single site pointing the way to the growing number of Australian arts and cultural sites on the Internet. The new list is by no means exhaustive and the site does not include a search engine – but it has gathered a diverse range of geographically dispersed organisations and individuals from a wide range of arts, cultural, media and multimedia backgrounds together in one location on the Internet.

It is expected that this type of site could be developed and maintained by external organisations like the Australia Council and/or commercial Internet service providers. In the meantime, DoCA is able to use the new list, and the links from it, to demonstrate to the arts community the many positive uses offered by the Internet. As well as the direct and immediate benefits to the arts community and multimedia industry, we are hoping the site will also stimulate people's imagination to consider the much wider range of on-line services which will be available in the near future – and to start them thinking about ways of utilising the broadband environment. There are also indirect benefits from such a list, such as promoting cultural tourism and disseminating information about government programs. There should also be a greater participation in cultural activities as the various 'virtual' communities expand, and crossover activities combining real and virtual events become more commonplace.

The new site can be reached via the DoCA Home Page *http://www.dca.gov.au* or directly to the list at
http://www.dca.gov.au/artsites/site_top.htm

Department of Communications and the Arts
Ph: (06) 279 1056, Fax: (06) 279 1079

Interactivity

Much has been made of the interactive nature of multimedia. Unfortunately, much of the talk stems from a misunderstanding of the nature of the relationship between people and media. Research has shown that people's relationship, even with the traditionally 'passive' medium of television, is highly interactive. It is not a one way process, but a highly active engagement and interpretation. Similarly with reading books, people employ highly active methods of searching, skimming and interpreting, using such features as contents, indexes and headings to find the information they want. Text is linear in appearance only; it is possible for any two people to pick entirely different routes through the same text. Indeed, in some texts such as reference books, there are an infinite number of potential routes. Similarly, you can use a paper map to interactively navigate from any one position to any other through an infinite variety of intermediate positions.

This is very different from interactive multimedia systems where every potential route through the system has to be preprogrammed. And while this can lead to a great number of permutations and combinations, the total number is determined by the programmer, not the user. This actually makes interactive multimedia less interactive than most books or maps.

Anticipating the most useful routes for people to navigate through an 'interactive' system, where the potential routes are largely invisible, has proved one of the most difficult challenges facing multimedia designers. Indeed, there is something ironic in the claim that it is interactive, when every interaction becomes a problem to be solved rather than an opportunity to be offered. One might be forgiven for thinking that such interaction is the result of a desire to control rather than liberate. There are no immediately obvious solutions to this problem and this means that testing and rapid prototyping are essential in multimedia development.

Beyond the novelty

Any new technology or new artistic medium enjoys a brief honeymoon, but its long-term survival depends on more than novelty. It must provide something uniquely and powerfully new by way of experience, access and understanding.

Most artistic forms evolve out of a real desire to achieve certain aesthetic and practical ends, as with photography, film and television. The technology was invented, often by artists themselves, because they wanted to do something more with their art. But in the case of multimedia, the desire of the digital industry to keep making ever larger profits, seems to have stimulated the development of this technology ahead of the artistic or public desire for the medium. There was no large hole in people's lives, no burning aesthetic challenge, that demanded the creation of multimedia.

This has caused many people to comment that multimedia technology is a solution in search of a problem. A technology looking for a purpose.

Whether it will acquire its own distinctive aesthetic and practical value remains to be seen. In the current desperate commercial climate, there will be no shortage of promoters who will wish to claim its importance.

Those of us with an interest in the practical and aesthetic problems of communication will watch this progress with interest and take part in experiments that explore the practical and aesthetic potential of multimedia, but we will continually observe those who use it to see whether it offers them something new. If it does, then it will find its place within the arts, if it does not, then we will all be wondering in a few years time what all the excitement was about.

Professor David Sless
Research Director, Communication Research Institute of Australia

Multimedia: A Bigger Picture

by Glenn Ferguson

Australian museums are being challenged by two coinciding developments: firstly, a changing social landscape in which the distinction between consumption, entertainment and informal education is becoming blurred; and secondly, a rapid technological advancement of information-related technologies (IT), of which the much-hyped multimedia is but one, immature part.

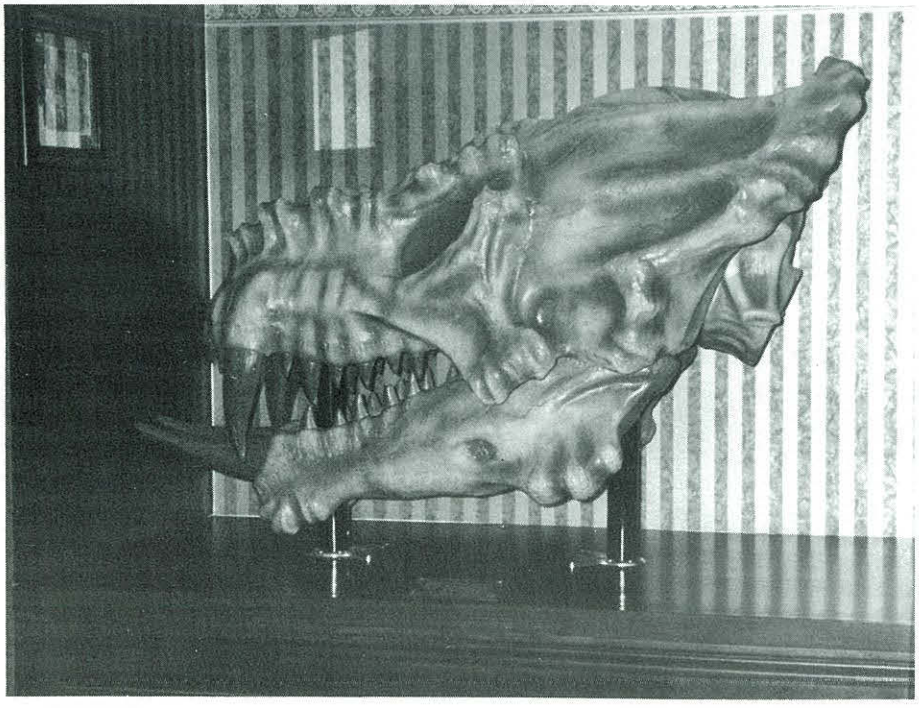
These developments affect the internal and external operations of museums. Internally, changes in information and communications technology are going to affect all current museum practice and, indirectly, the priority allotted to each area including collection and information management, education, public programs, research and evaluation, exhibition production and commercial development. Externally, there is an accelerating change in the way people are conducting their lives. The depth of these changes will affect even basic assumptions about museum visitors and core museum activities, however, the implications are only now becoming apparent. This, of course, is happening in an environment of reduced museum funding and a generalised decline in museum attendances.

Museum discussion should not be preoccupied with immediate opportunities, or technically-related issues. There needs to be a wider exploration of the social environment in which this movement occurs and the subsequent philosophical changes in museums that will invariably follow.

A World Outside

Recently, it is the production, economic opportunities and technical capabilities of multimedia which have received widest attention. This media and industry preoccupation has drawn the focus away from the broader opportunities and challenges facing museums. One of these challenges is a fusion of identity, as described by US author and Chair of History and Theory of Architecture at the Southern California Institute of Architecture, Margaret Crawford: '...the saleable product no longer carries the same importance, since history, technology, and art, as presented in museums, have now become commodified. The principle of adjacent attraction is now operating at a societal level, imposing an exchange of attributes between the museum and the shopping mall, between commerce and culture'.(1) Elaine Gurian echoes some of these points more simply: '... there are very effective commercial establishments that are usurping part of the instructional function children's museums have offered in the past... The public is having a difficult time differentiating between museums and attractions'.(2)

'*Martian Fossil*' (approx. 1.5m long), Inten-city, Westfield Shopping Centre, Hurstville. In this 'operations' room, 'pilots' wait before 'taking off' into outerspace to do battle.



Sydney is currently experiencing this phenomena. In Hurstville and Parramatta, two out of a planned twenty Australia-wide entertainment centres have been built in the Westfield shopping malls. Called *Inten-city*, these hi-tech centres are a product of the Village-Nine group (Village Cinemas and Channel Nine). *Inten-city* claims an 18-40 year demographic and borrows its identity liberally from a number of sources, including, sometimes superficially, museums. A spokesperson from the group recently asserted that *Inten-city* would satisfy a basic human need by providing an entertainment area in which people could gather socially, a function frequently claimed by some cultural institutions. Two future Sydney developments include a seven-story IMAX theatre at Darling Harbour (late 1996), and Rupert

Murdoch's proposed development of the 27-hectare Royal Agricultural Society showground site into a 24-hour entertainment centre and 'Fox' film studios.

This is not an issue that can be resolved simply by the competitive marketing of museums. People are exposed to increasingly sophisticated, attentive and responsive non-museum products and services. This exposure, coupled with the expanding forms and capabilities of ubiquitous communication technologies, is affecting tacit expectation levels within the wider community. Beyond attractions which compete for discretionary time, this range of technologies and services has taught society to expect satisfaction at a convenient time and place.

Australia, on a per capita basis, has embraced new technologies to a degree unmatched anywhere else. Surveys indicate it is families with children up to their late teens who are most likely to possess these new technologies, making them the potential users of newer IT.(3) This is an important observation with implications for those museums whose largest number of visitors fall into this category. Current estimates provide as many as 600,000 (4) regular Australian Internet users out of an estimated world total of 30 to 50 million.(5) MIT's multimedia expert, Nicholas Negroponte, projects as many as one billion persons worldwide having access to on-line services within ten years.(6) By the end of this century, this represents an estimated $3 trillion in on-line goods and services.(7)

Predictions about the potential effects of such transcendent technologies are not new. More than a decade ago Barry Jones wrote: 'We should realise that technology has been far more influential than ideology, elections, political struggles, or education in changing the way we live. Technology, while neutral or 'value-free' in itself, in the hands of its owners or controllers becomes a political instrument for shaping society, and this power is exercised to a degree that even totalitarian governments would hesitate to attempt.'(8)

Museums as Communicators

Political theorist Langdon Winner further developed the concept of technological determinism with his term *reverse adaption*, defined as: 'the adjustment of human ends to match the character of available means'.(9) For example, where 'abstract general ends – health, safety, comfort...become highly instrument-specific...The desire to move about becomes the desire to possess an automobile...the need to eat becomes the need for a refrigerator, stove and convenient supermarket...' and so on. For museums, this could be interpreted as: 'the need to communicate becomes the need for exhibitions'. It could also be suggested that in the absence of viable alternatives, museums have become overly focused on the need to have an audience physically arrive, obscuring other possibilities.

The expressive ability of multimedia and the flexible delivery capacity of related on line communications technologies will impact on all current interpretive forms conducted in museums. The museum 'visitor' will represent a decreasing percentage of users, unrepresentative of the total number engaged by museums through new outreach forms. It is possible that dominant terms like *visitor* or *audience* will give way to a term similar to *user*, reflecting the significantly larger number of patrons *logging-on* from around the planet.

In some museums there has been a recent trend towards object-free exhibitions, reflecting a position that museums are principally about ideas and not objects. Such object-free 'exhibitions' and those museum activities which don't provide a significant and clearly differentiated experience must ultimately disappear. Realistically, communicating 'ideas' without the inclusion of objects does not require large buildings or large numbers of academic and support staff. Nor does it require an audience limited to a geographic area. The capacity of on-line media to reach an increasing number of people not limited to geographic location will make these sorts of non-object based, in-house expressions untenable luxuries. In a complementary fashion, the in-house museum exhibition of the future may well owe more to its classical object-rich predecessors than recent trends suggest.

A See-Through Museum

In museums which undertake significant levels of collection-related research, the largest proportion of overall activity is often contained, iceberg like, below the level of public access. In the larger Australian museums, collections can approach 20 million individual items. These collections, along with the enormous volumes of specialist research, databases and other support material, are confined to the scrutiny of relatively few, more often because of physical constraints. As museums begin to appreciate the increasing power of information systems, new potential for existing forms of knowledge will become apparent for broader use. These enormous repositories of information and knowledge contain a wealth of opportunity for different research purposes. Multimedia need not be pre-packaged, as many would identify it in its CD-ROM version. It can be a digital collection of existing information brought together by the power of personal computer systems, and explored according to individual and customised needs. This has been called *dynamic interrogation* (10), *'the ability to inquire systematically and bring structure to data sought from the passive body of information'*. This is another opportunity for museums to engage new users who are not necessarily specialists.

Senior administrators, researchers, information professionals and collection managers face an expanding set of considerations. These perhaps require some complex exploration of professional and ethical values and responses to find a balance between culturally sensitive issues and financial, educational and cross-institutional opportunities. These won't just

be technical considerations. They will require more discretionary decision making at the point at which these technologies intersect with public users and first-line administrators, such as collection managers.

Alvin Toffler suggests this, but in the context of commercial industry: 'What's happening now is that the environment is so complex and the corporations themselves are so complex, and technologies and markets are changing so rapidly, that the people at the top simply don't know what the people doing the job need to know. So leaders must get the message. They must give workers these information tools and the right to make decisions. You can't have people down below performing well for business if they don't have the freedom to seek information as they determine they need it.'

Researching the future

In a recent *Museum News* article, Csikszentmihalyi and Hermanson wrote: 'It is essential to realise...that current knowledge is insufficient to provide a basis for thoroughly informed museum practice...We have no table where we could look up the elements that will attract the curiosity of different types of visitors; we cannot anticipate the interests of our audience... Many of these issues will take decades of basic research to resolve.'(12) The value of such information by say, the year 2025, is hugely speculative. That museums will even exist in their current form 30 years from now is extremely unlikely. Those museums fortunate enough to have resources devoted to such visitor research are often able to provide little more than what they might consider smaller representative, though important, samplings.

One of the basic capacities of computer-based multimedia, coupled with on-line communication technology, is that of comprehensive sampling. Every user who logs on to your system can potentially be tracked throughout the period they are engaged. The parameters for survey are entirely up to the technical capacity of your equipment and the creativity and insight of museum researchers. The acquired empirical data alone is potentially absolute in its representation of user responses. These technologies can also serve in-house museum-based activities by being used as an antennae, gathering responses to proposed activities and providing opportunity for front-end feedback.

It isn't just this form of research which is destined to change. Most similar activity has been based on knowing what is most effective for dealing with 'visitors'. Multimedia has its own forms and capacities. For example, research on text in museums has largely been approached from the forms we find in existing mono-dimensional readings – the sort typically found in a controlled museum environment: exhibition texts, labels and pamphlets. Multimedia provides text with a multi-dimensional interactive capacity. Individual works and sentences can be 'exploded' to hidden and more complete explanations to a depth largely determined by the skill of the programmer, and then not necessarily as text, but maybe as moving pictures, spoken words, animated diagrams – whatever an imagination determines.

The Future

Whole areas of research and museum theory relating to the 'visitor' will be confronted by IT and multimedia, and, again, by decisions relating to available resources and the degree to which the 'visitor' represents the total of a museum's user-base, and the acknowledged value ultimately apportioned to each. The willingness to accept this or any of the possible directions inferred here is a matter for individual institutions. It requires consideration of longer-term objectives against more pressing concerns associated with resistance to change, or even professional territoriality. If nothing else, it would be well to consider that the great capacity of these technologies is their ability to overcome the limits and protection that geographical particularity and higher production costs have afforded. As Paul Allen, co-founder of Microsoft, stated recently: 'The Internet is exciting to me as an investor because the barrier to entry is very low. Anybody can put a product out.' In electronic space Sydney, Melbourne, Charters Towers, Tokyo and Cape Town are closer than a museum next door.

Glenn Ferguson
Exhibition Project Manager,
Australian Museum
Internet address: glennf@amsg.Austmus.oz.au

References

(1) Crawford, M. 1992, 'The World in a Shopping Mall' in *Variations on a Theme Park*, Michael Sorkin (ed.), Mill & Wand.

(2) Gurian, E. 1995, 'The Changing Paradigm' in *Hand to Hand*, Vol. 9, No. 2, Association of Youth Museums.

(3) Plunkett, S. 1995, 'The Young Lead Us To High-Tech Heaven', *Business Review Weekly*, July 24.

(4) Quittner, J. 1995, 'Wiring the World', *Time*, July 17.

(5) Plunkett, op. cit.

(6) Plunkett, op. cit.

(7) Quittner, op. cit.

(8) Jones, B. 1990, *Sleepers, Wake!* (2nd ed.), Oxford University Press.

(9) ibid.

(10) Leebaert, D. (ed), 1991, *Technology 2001, The Future of Computing and Communications*, MIT Press.

(11) Plunkett, S. 1994, 'The Superhighway to a See-Through Society', *21C*, Autumn.

(12) Csikszentmihalyi, M. & Hermanson, K. 1995, 'Intrinsic Motivation in Museums – What Makes Visitors Want to Learn?', *Museum News*, May/June.

*soft*museum: digital technologies and the museum of the future

by David Court

In the prevailing paradigm, museums are central repositories of scientific and cultural artefacts housed in large public buildings. From time to time they curate and exhibit their holdings according to the knowledge and presumptions of the day, including the presumed but hard-to-know preferences of the public. They are also stores of local and specialised knowledge which in their absence might languish or disappear. In their work they uphold internationally accepted standards of classification and scientific reporting; sometimes they are called in to analyse unusual phenomena like the mass pigeon deaths in Sydney's Hyde Park last summer. People bring them the strange things they find or inherit, for explanation or verification.

In this traditional model, museums are collectors, exhibitors and expositors. Most are free to the public and draw their income and capital needs from governments, in lieu of access charges.

Contrast this with my hypothetical, near-future *soft*museum. Other than the server in the director's study – and other participating servers scattered throughout the world – it has no physical location. Its holdings are purely digital, a virtual collection of words, sounds, images and overarching design. *soft*museum is, in effect, a distributed network of international experts working in formal and informal alignment, some as researchers, others as curators, some with institutions, the rest independent.

*soft*museum's visiting public is international. Access is by registration only, though some of its holdings can be accessed free of charge, as an enticement to the 500 million (circa say, 1999) worldwide users of digital information networks. It also has contracts with a number of corporations and several governments for the delivery of customised information services.

Because the market it serves is so intensely competitive, *soft*museum rigorously adheres to standards of design and content that conform with its brand image and reputation: the brand is its major commercial asset. Part of the brand's value is associated with *soft*museum's participation in proprietary network services such as (say) On Australia or Delphi; the rest in its downstream licensing of other content providers who conform to its publishing standards.

Put succinctly, *soft*museum does everything a traditional museum does except the physical holding and exhibiting of objects. Yet it operates quite differently.

The economic consequences of the PC

Information transactions take place in a baroque economy filled with economic exotica as far removed from the physical economy as the life forms of the Ordovician were from the Cambrian exotica of the Burgess Shale. It is a topsy-turvy economy where competitive advantage lies in the manipulation of perception and desire, and the value added by a brushstroke can exceed the earnings of a lifetime of physical work.

In the information economy the primary constraint is media bandwidth (defined here as the amount of distributive capacity available for the transfer of ideas from their creators to their consumers). Historically, bandwidth has been extremely scarce. To appreciate its importance we need only imagine a Stone Age Shakespeare, his output limited to the wall of a cave, or a medieval Einstein, writing margin notes in a theological treatise. Bandwidth scarcity has profoundly shaped the human discourse. Ideas, like rich men, have to pass through the eye of the needle.

In recorded history, there have been five great bandwidth innovations. The first was the rock face, the second the papyrus, the third, less than 500 years ago, was the printing press. In this century the harnessing of the electromagnetic spectrum brought forth radio and television. Last came the digital computer – a truly generational advance, greater perhaps than anything that came before.(1)

Digital technologies have brought bandwidth under the influence of something called Moore's Law, a theory which holds, in effect, that productivity growth in digital technologies is exponential. Extrapolating from this, futurist George Gilder has predicted that early next century consumers will be able to purchase – for about $100 – a microchip with the processing power of 20 Cray XYP supercomputers. The implication is that someone sitting at home with an entry-level computer will be able to roam a gargantuan virtual library/museum containing almost every word, picture and sound ever recorded.

The economics of *soft*museum

*soft*museum owes its existence to digital

technologies. Because under Moore's Law the costs of holding and distributing data are declining to zero, there is room – niche space in the ecological jargon – for many new entrants. *soft*museum is one such entrant. It belongs to the intellectual tradition of the museum but its participation in a global information economy frees it from many of the traditional constraints of its forebears – in particular, their dependence on the patronage of the state.

*soft*museum's revenue base is more diversified. Its core funding comes from its international subscribers, who pay annual or usage-based fees to access its information services. It also has sponsors, for the most part multinational companies who see benefits in an association with its work. It regards government funding as just another form of corporate sponsorship, as a source of foundation and exhibition funding obtained by the grant of naming and other promotional rights. *soft*museum is an aggressive bidder in the burgeoning worldwide information economy.

On the cost side, *soft*museum has a structure quite unlike a traditional museum. Its capital costs are more like those of a small business, while its operating costs look more like those of a music or book publisher – minus of course, the physical costs of publishing. Its only other significant costs (which do not appear in its accounts, being upstream, distributive costs, incurred off balance sheet) are the rents it pays to the service providers who carry *soft*museum in their proprietary domains.(2)

Like other firms whose underlying assets are intangible (being mostly based on intellectual property rights) *soft*museum's capacity to raise new capital lies somewhere between nil and the South Sea Bubble territory of such famous IP startups as Microsoft and Netscape. But the next generation of capital providers will devote more time and ingenuity to the funding of enterprises like *soft*museum, developing investment products that better define and match the risks and rewards of intellectual property development. Over time, the performance of these products will lay down an economic history that investors can examine for signs of pattern and advantage. There will be more and more sophistication in IP capital markets and therefore more capacity to fund the vision of firms like *soft*museum.

Competitive advantage on the web

For content providers, the web is a dynamic market swept by waves of technology change and the swells of fashion. Niches open and close overnight. Success is the only defence. But how to succeed?

One way, obvious enough to anyone familiar with the museum tradition, is to occupy the hub points – the virtual town centres of the web.(3) Such locations will emerge in the digital landscape in the same way they do in the physical economy, through centrality and its close correlates, convenience and habituation.

In some sci-fi visions, this centrality is pictured exactly like geographic centrality, even down to mimicking the dynamics of real estate markets. It's a useful metaphor. Like real estate, the value of digital property will emerge from the consensus of usage – through the listings, links, references and cross-references that users make and leave behind them in their exploration of the web.

The vexed question of public access

Because they are funded by governments, traditional museums have to demonstrate relevance and appeal to the general public. In doing so, they are both helped and hamstrung by the policy of free public access – helped by the enlargement of audiences that results from zero-pricing, hamstrung by the consequent lack of pricing feedback.

*soft*museum has a different approach to public access. It uses zero-pricing to trawl for new subscribers, on an introductory basis, but its preference, even when fully sponsored, is to exact some kind of payment from its users, even if only nominal. One reason is its desire for feedback, another is to signal its pricing to potential users. But the real reason is its differing conception of the principle of subsidised public access.

Free public access is a blunt economic instrument, invented in the nineteenth century to ameliorate the widespread information poverty of the time. It deals with the problem of regressive, inequitable pricing by

simply abolishing price. This is at best a crude solution to a complex question: how to create an equality of access under conditions of variable user wealth?

The question is valid, and still has to be answered, but in first world countries with broadband infrastructure we can attempt a more sophisticated response. We are developing a deeper information economy, with one-to-one and one-to-many connective capacity and therefore more capacity to explore and satisfy individual consumer preferences, and to assess and levy appropriate payments.

We will know more about what people want and what they're prepared to pay than any previous society.

Caution: speed hump

We are still six years out from the new millennium. Should we accept its vision? More bluntly, how soon will *soft*museum be up and running?

A cautious answer to this question would talk about the time frame for the roll-out of broadband cable (four years to pass most urban and suburban homes), the economics of switching technologies (which will not deliver so-called strong interactivity for at least three or four years), the VCR model of technology adoption (twelve or thirteen years to household saturation), the constraint of the zero-price expectations ingrained in consumers by the mass media, and the absolute constraint of available content – or how long it will take for creators and publishers to establish a viable, working market for the financing of works designed expressly for the new media.

These are all valid considerations. They suggest a time frame of five to ten years for the full flowering of the digital information economy – a comfortable period for planning purposes.

My only caveat on this would be that in researching this paper I came across a live, functioning site called WebMuseum, curated by Francois Pioch at the Ecole Normale Superieure des Telecommunications, winner of the Best of Web '94 for Best Use of Multiple Media, funded by the BMW Foundation, with links to multiple sponsors including Britannica Online, Netscape Communications, the University of North Carolina and the Science University of Tokyo.

*soft*museum already has its first functioning competitor.

David Court,
Editor, *The Content Letter*,
and commentator on new technologies
content@ozemail.com.au

References

(1) Influential information theorist and former Grateful Dead lyricist, John Perry Barlow, says the invention of digital networks is comparable in signficance to the capture of fire. Digital technologies attract a lot of breathless reporting.

(2) Despite the common belief that digital networks will eliminate the need of media middlemen, and their gatekeeping rents, the reality is that people want dependable destinations and won't quibble at the rents charged by intermediaries who reliably provide them.

(3) Such positioning is characteristic of conventional museums but in this analogy, digital networks represent a nation of new towns whose centres are only beginning to be planned and laid out.

museum@home

by Kevin Murray

It's time to...learn from those people who are at one with the Earth

vision statement from Yothu Yindi's World Wide Web site *http://www.YothuYindi.com/*

After centuries of exile in city centres, the museum has at last made the journey back home. Reincarnated as a desktop computer, the museum at home allows private access to the world's collections of historical artefacts. In CD-ROMs, objects are woven into multimedia files, while on World Wide Web sites, sound and images from the world's cultures are offered in a limitless expanse.

The limitations of traditional museums seem to disappear magically. Geographically isolated institutions suddenly find themselves on a global stage. The reduction of images to digital media enables pokey old museums to transcend their architectural constraints. Domestic users now have the liberty to choose their own itinerary, freed from both the scrutiny of guards and the subjective judgment of curators. And finally, perhaps most persuasively, the crimes of colonial appropriation are no longer necessary in an information economy where digital reproduction is more valuable than object ownership.

It would be simple to continue like this – building up expectations of democratic utopias without walls or hierarchies. However, it seems necessary to look a little deeper. The uncritical acceptance of computer screens as the ultimate destination of cultural activity need not exclusively be due to their technical advantages. What are the psychological motives behind the digital revolution? The new millennium must play some part in the drive to transform culture from a material to a virtual activity. If, deep in the collective unconscious, the year 2000 represents an apocalyptic transformation of humanity, from a fragmented assortment of competing groups to a global unity, then the digital medium offers just the right vehicle of 'convergence' necessary to transcend all traditional borders. It's worth keeping such millennial hypotheses in mind, at least to think beyond the purely practical uses of display technologies.

Substitute

The most direct way a CD-ROM producer can construct a digital museum is to incorporate a map of the original building. *Le Louvre: The Palace And Its Paintings* (Electronic Arts) provides home visitors with remote access. As well as menus for individual artists, *Le Louvre* presents works according to their position in the actual galleries where they hang. The hyperlinked field for each work includes not only brief biographies of the artists and spatial analyses of composition, but also reference to neighbouring works, and even a scaled measure of the work's size in proportion to the body of an average visitor.

Most audio commentaries in *Le Louvre* offer praise for artistic value – the compliment of 'refinement' figures often. This commentary is delivered with an English accent, though *Le Louvre* was co-produced by Montparnasse Multimedia and Réunion de Musées Nationaux.

The very first art museum on CD-ROM was somewhere between a virtual tour and multimedia narrative. Microsoft's *Art Gallery* features the National Gallery of London collection of paintings. Perhaps because the English museum is less identifiable than the Louvre, no reference is provided for the position of works within the gallery. Viewers instead have a dense field of links including themes, subjects, artists, country and time. The four guided tours adhere strictly to their theme, which involve technical matters of composition and conservation. With English practicality, *Art Gallery* puts information before experience.

Though Australia has yet to put a national collection on CD-ROM, it has produced a multimedia art catalogue. *Conrad Martens: Life and Art* (produced by Monitor) first accompanied an exhibition of works at the NSW Mitchell Library and is now available for private purchase. The field of links for each work includes an on-line catalogue essay, biography and Martens' own journal. In addition, there is the full text of a lecture delivered by Martens, accompanied by an audio recitation with the original handwritten version on screen. Subtitled, 'An interactive journey into the world of Australia's leading colonial artist', the CD-ROM signals a change of emphasis in exhibition design: from a traditional static *display* which lays out works in one glance, to a *journey* through which an artist's career is gradually revealed with surprise and even suspense. While *Conrad Martens* is limited to one conservative artist's life, it does promise a more contextualised approach in art publications.

The latest technology presents the first peoples

When the subject is indigenous culture, the navigation map is more geographic than architectural. The new Microsoft title, *500 Nations*, is a 'domesticated' television series about the history of

American Indian civilisation. In the welcome sequence, Kevin Costner refers to this modern technology as a way of: 'returning to the fire circle...to bring the past alive'. As with many other titles in the Microsoft Home range, the assertion of American culture is subtly persistent. Costner proudly introduces: 'our own story...which is worth talking about' as much as the classical civilisations of Greece, Rome, Egypt and China. With nostalgia for the anti-clerical Puritan roots of modern America, pre-invasion Indian cultures are pictured as being without need of a church, since their god inhabits the world around them, in the rocks and trees.

Though lacking in detail, *500 Nations* offers intriguing glimpses of native American arts and crafts. It also exploits the possibilities of its medium to include sounds, such as Innuit throat singing, and a walk-through of digitally reconstructed architecture, such as the ancient Mayan city of Palenque.

These treasures are framed in the story of a thriving continent of native cultures – at one with nature – who were brutally ravaged by unscrupulous Spanish and English soldiers. Their descendants live on today attempting to continue the traditions of their ancestors. The narrative framework for *500 Nations* is indeed anti-museum – in a 'wholesome' kind of way. It dwells more on the stories of individual lives than relics of lost civilisations. This humanistic tenor makes it difficult to experience these cultures beyond their melodramatic struggle against evils.

Though indigenous culture plays a predominant role in the Australian home museum, here post-colonial narrative relates more directly to the external politics of multimedia production than the stories contained within. The official aim of Aboriginal culture on CD-ROM is to make colonial collections accessible to their original owners. *Punu (Artefacts and Culture of Pitjantjatjara and Yanhuntjatjara)*, currently being developed by the South Australian Museum, is designed to provide the north-west desert Aborigines with a record of objects the museum holds on their behalf. According to the Project Officer, Mark Judd, the title 'punu' was chosen because 'object made from wood' was the native word closest to the Western notion of 'artefact'. *Punu* will contain images of objects in their collection, capable of three-dimensional rotation, and 1930s archival footage by Norman Tindale. To restrict access, Judd is considering the possibility of masking some of their sensitive material with a password.

Micro Gallery gives visitors access to the National Gallery's 2000 or more paintings via a computerised information system. Located in the new Sainsbury Wing, it contains background information on every painting in the collection. Touch-sensitive computer screens at twelve work stations offer an illustrated catalogue of the collected accessed through four sections: artists (containing a biography of the painter selected and a visual 9index of that painter's works contained in the gallery; classification of picture type; historical atlas; and general reference. Pages from the catalogue can be printed out and visitors can assemble and print a personalised gallery.

The Gallery of Aboriginal Australia is also digitising its Maningrida collection. According to Acting Manager Laurie Richardson, the Maningrida people feel comfortable with electronic versions of their artefacts and have both the hard- and software to read them. The Maningrida Arts and Culture Centre (*http://www.peg.apc.org/~bawinanga/welcome.html*) provides images of work for sale for customers around the world.

Though with a non-Aboriginal audience in mind, the National Gallery of Australia CD-ROM of their Arnhem Land

collection aims to sensitively evoke the stories from which their art emerged. *Patterns of Power* is based on a chapter from Wally Caruana's book *Aboriginal Art*. As well as standard links to author and subject, the field for works includes regional dreaming stories. Works involving craft skills are supported by video footage with subtitles.

While coordinating the multimedia authors and gallery staff, NGA's Peter Nauman is at pains to involve the Yolngu people in the enterprise. Because 'Rom' means 'law' in the Arnhem Land cultures, they call their product an 'electronic book' rather than 'CD-ROM'. A prototype of this 'electronic book' was recently presented to the Yolngu community with positive response. Ironically, though, they asked NGA representatives whether they could place their own sacred stories on CD-ROM for safekeeping. The use of encryption and passwords will ensure that this material is protected from unauthorised dissemination.

The proposed purpose of this indigenous use of CD-ROM is precisely the opposite to its Western use: they aim to *restrict* rather than *spread* information. To the romantic Westerner, this request finds multimedia back in the embrace of traditional archival practices such as the *tjuringa*, the flat wooden disc on which markings of dreaming stories are kept. Here is a magical compromise between the stock of materials kept by museums and the simple tribal object which has traditionally been used as a home for histories.

One of the five titles recently granted funding by Creative Nation is *MOODITJ: Contemporary Aboriginal and Torres Strait Islander Arts. MOODITJ* ('excellent') includes visual arts and craft, dance, drama and music. Emerging from a consortium which includes the WA Development Unit for Instructional Technology, it claims to highlight 'the fact that the underlying spirit of this art derives from the beliefs and practices of traditional indigenous culture'. It is this phrase 'traditional indigenous culture' which characterises the current practice of multimedia. While it seeks to celebrate indigenous culture, it does so by separating that culture from mainstream Australia. In other words, 'they are wonderful because they have none of our modern problems'. This emphasis on 'traditional' implicitly excludes the very urban Koori works which play such an integral part in contemporary Australian art.

Archive

For both cultural and technical reasons, CD-ROM seems most sympathetic to those cultural institutions whose mission includes maintenance of an archive. *The Encyclopedia of Aboriginal Australia* (AIATSIS), produced by Kim McKenzie, is a good example of the wealth of material normally stored in the basement, such as late nineteenth-century film footage of Aboriginal dance. At the other end of the cultural spectrum, the BBC series of Shakespeare CD-ROMs (Double Impact), such as *Romeo and Juliet*, contains classic dramatic productions and ancillary interviews by figures such as Germaine Greer. To that extent, CD-ROM offers viewers the range of historical material and the sense of adventure normally felt by curators and editors in the preparation of exhibitions.

What's left of the museum?

Does multimedia supersede the object? If you take a dialectic, or even Buddhist perspective, you might speculate that multimedia has precisely the opposite effect. Though it is too early to determine whether or not this is so, the Museum of Sydney is early testimony to the possibility that 'opposites attract'.

The museum is worth visiting not only for the historical detail but for the delicate balance between abstract and concrete displays. Using the Montreal artist Luc Courchesne's seamless technique of perspex projection, the space is filled with stories of the individual lives that once inhabited colonial Sydney. The Bond Store entices its visitors into a subtle series of manoeuvres as visitors trigger infra-red detectors that set off virtual storytellers (no clicking allowed). In the same room, a number of large iron chains hang from the ceiling for visitors to handle, testing their weight and recognising the very material substance that made up life of previous generations.

In celebrating the anecdotal corners of history, this museum avoids the linear assumptions of the traditional display cabinet. Objects are freed to project their own aura, notable particularly in the sturdy sandstone boundary marker that stands next to the intricately narratable objects in Narelle Jubelin drawers. Such features make the Museum of Sydney a fascinating experiment. It shows the possibility that the negation of the material world in screen technologies might in fact lead to a rediscovery of the things themselves.

home@museum

One of the critical issues to emerge from the current honeymoon of new media technologies is a sharp division between two contrary attitudes to the past. The past is revealed either as a lost unity (indigenous culture on CD-ROM) or a fragmented world (Museum of Sydney). In a way, they are both part of the same project. Towards indigenous cultures, the project is to recover universal themes that unite people. And for those with previously exclusive historical mission (i.e., the moderns), there is a new understanding of the random, chance elements which determine events.

If it is a matter of 'bending the stick the other way', then we may see odd remissions: a tribal culture with its own misrecognitions and nostalgia, or modern culture possessed of a hidden spirit. We can only imagine what kind of media might contain that message on the other side of the millennium. CD-ROMs made from lacquered oak?

Kevin Murray

Kevin Murray is a Melbourne-based independent writer and curator

Pioneers. O Pioneers

by Gael Newton

We today's procession leading. We the route for travel clearing.
Pioneers! O Pioneers!
Walt Whitman (1819–1892), *Pioneers. O Pioneers* (1865).

Stranger, if you passing meet me and desire to speak to me, why should you not speak to me?
And why should I not speak to you?
Walt Whitman, *To You. Leaves of Grass* (1860)

By 1900 the American poet Walt Whitman had become the poet laureate of technology and the new millennial order. He was the most 'unbuttoned' of enthusiasts for the new age of machines and mass communication.(1) In his view technology would transform the polis, bring on democracy for the masses and infuse and liberate the psyche. Had he lived in our era, Whitman may well have embraced the Internet as a realisation of his desire to speak with the passing stranger.

Past enthusiasms are instructive. The technofetishism of early this century has a curious rapport with our current embrace of multimedia as the white hope of the future. Indeed, multimedia has revived an optimism for a future defeated by late 20th century ecological and social disappointments.

Meeting the challenges of collecting, interpreting and displaying electronic art

I am still an observer and novice player with computing and multimedia. Professionally, as a curator of photography, the need to acquire new skills in word processing and communications is a daily reality. However, what interests me most is how museums will meet the intellectual and resourcing challenges of collecting, interpreting and displaying electronic art. Most major museums in Australia have already collected a few works which require electric power – even if only a bulb or neon light. No museum has committed itself to comprehensive representation of electronic art but several have good holdings of artists' videos and films from the 1970s – 1990s, or the odd audiovisual installation work.(2) Exhibiting these works usually requires the loan of audiovisual monitors and players already in use for educational purposes. New artworks on CD-ROM will probably follow this pattern as CD-ROM computers become standard equipment. Nevertheless, the new generation of large-scale interactive electronic artworks seem to present an 'Everest' of challenges, with colour video projectors costing up to $30,000.

The mood in the art world is that it is now time for electronic arts to come in from the cold, and not to be perpetually classed as 'experimental'. At multimedia seminars, analogies are frequently made between the current position of electronic arts and the induction of photography into the art world over the last 20 to 30 years. In Europe, electronic-medium artists survive by exhibiting in the established circuit of new media festivals and avant garde shows. They often receive exhibiting fees relative to their status, but few artworks are purchased.(3) However, normalising the relations between the broader art world and electronic arts communities must be recognised before the questions of resourcing collections are dealt with. Thus, the choice of video artist Bill Viola for the American pavilion at the 1995 Venice Biennale is a significant endorsement. Furthermore, Viola's installation has reputedly been purchased by an American museum for a vast sum which included all technical equipment.

Earlier this year, I visited a number of institutions in America and Europe involved with creativity in electronic media. At one end of the spectrum was MIT in Boston, which is committed to the creative development of applied computer-based communications, and at the other ZKM (Zentrum für Kunst und Medientechnologie) in Karlsruhe, which is committed to the pure electronic arts. Both explore music and sound. I also visited independent and art school-based media centres, plus art museums which collect electronic visual arts, such as the Centre Georges Pompidou in Paris. Few of these institutions were collecting complex works, and this cautious curatorial approach was matched by the fact that few world art museums are planning to digitise their collections for internal or public access purposes.(4)

Modern public museums developed from the static displays of the seventeenth-century collectors' *cabinets de curiosité*. They are inherently ambulatory experiences in which the viewer moves past the works rather than vice versa. Most computer technology by contrast is sedentary. Challenges to the usual static and promenade-style museum displays were apparent at the KZM Multimediale 4 festival in Karlsruhe in May. Most works were installations, including those of Australians Bill Seaman, Jill Scott, Peter Callas and Jeffrey Shaw. Many works could be viewed

satisfactorily, if superficially, with a walk-through. Scott had multiple-user stations for her work and Seaman's piece could be enjoyed by numerous viewers, even though only one person per time operated the interactive menu. Yet trying to fully explore the interactive works in a four day festival was like attending a film festival where one had to vacate the seat to give others their turn: some pieces never fully revealed themselves despite daily programming changes.

Multimedia discussions are dominated by information access and promotion, rather than creation of art. Collecting electronic art, however, is quite different on a practical level. Many works are major installations requiring equipment and technical expertise to mount and maintain them over the period of display. Artists are developing working relationships with technical experts and envisage that in future their special programmers will travel with them to install and maintain works on display. Equipment availability can be critical and high quality projectors are not generally items on the museum shelf. Finally, the fear of rapid obsolescence is justified: will we be able to play works 100 years from now when parts for hardware and software applications are out of stock or no longer useable? KZM Director, Jeffrey Shaw, for example, on reinstalling an earlier work at Multimediale 4, actually had to reject some of the superior picture resolution provided by new equipment in order to match the intentions and nature of the piece as first conceived.

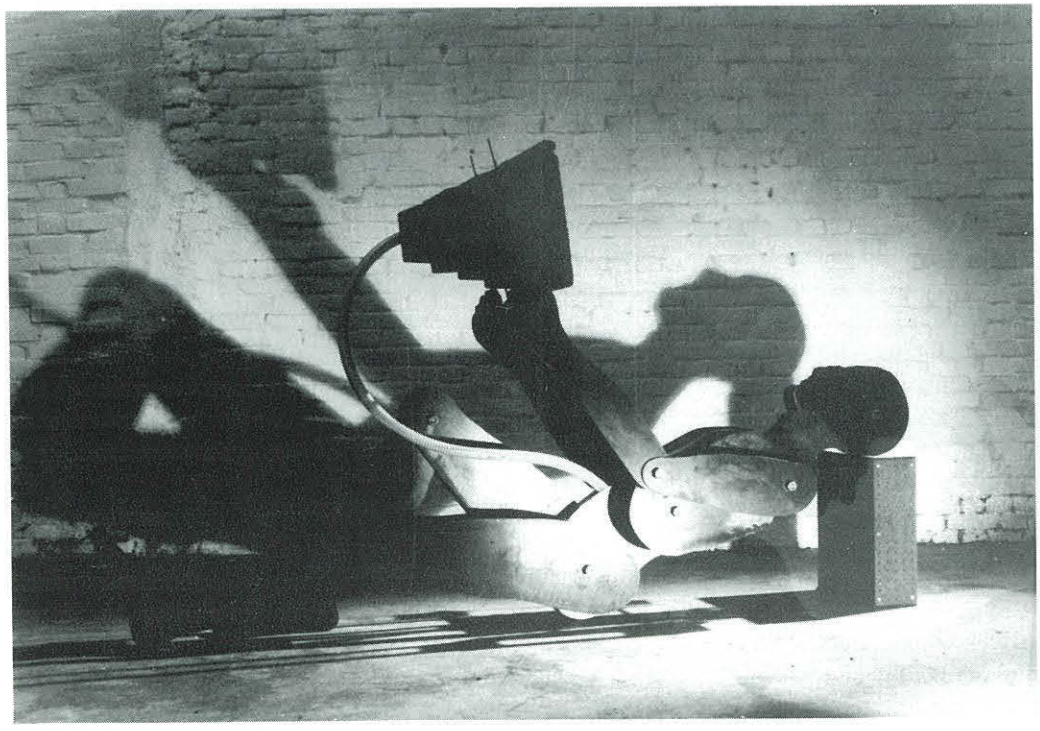
It could be that electronic artworks will develop more like theatre performances and be seen not as 'collectable' objects but as experiences preserved by legend, film and photographic documentation. Alternatively, CD-ROM and video art might be better accessed on-line from central collections operating as a film library does.

The caution in regard to electronic art reflects a fear that screen experiences will diminish the authority and aura of original experience and real artworks. Many dismiss these fears about displacement of direct physical experience of art objects and cite similar worries about the impact of television and film on literacy. However, book sales appear to be as vigorous as ever – the new media merely extend rather than overwhelm that experience and attachment. But there is a growing number of artworks that have no form other than their existence on screens. The need to deal with these electronic 'originals' is often overlooked in the debates about offering reproductions as substitutes for more physically discrete art objects. Myths abound, not only about how electronic media will reshape the future but what the implications are for current processes.

Technologies, as Whitman intuited, reconfigure the psyche as much as social space, but we don't yet know how the new media formats will reconfigure the concept of the artwork.

The problems museums face are significant though not insoluble. Confidence is needed to discriminate and to make reasonable judgments about individual acquisitions in new media and their long-term care. Museums should consider developing representative collections, in addition to the proliferating exhibition programs. What is at stake, surely, is the need to officially recognise works of art in the age of electronic reproduction and creation. There is also the imperative, if we are not to be culturally schizophrenic, to diminish the separate concepts of art versus technique, which is endemic to Western philosophy. When photography was introduced into the cultural canon in the seventies it offered recognition that creativity can occur in technological media.

Frank den Oudsten, *Platos Schatten*, video sculpture 1995, Sammlung ZKM-Medienmuseum. An installation of ten sculptures presenting films in each monitor, exhibited at the Multimediale 4 Festival, may 1995.



Museums as sites of information exchange

Museums may need to be more akin to sites of information exchange as well as three-dimensional

experience. Collections of electronic art may take the form of the lounge, in which video introductions and video-based works are accessible like books from a library, such as the video lounge at the Georges Pompidou Centre. It is surprising that such a simple resource has not been more widely adopted. Modern society has pined for an archaic past in which the artist has a role and art is part of the fabric of life. Some of the enthusiasm for the Internet is also about this hoped for reunification.

On a simple level, every institution can participate in some aspect of electronic arts and communication and provide a welcome to artists and artworks through an accessible PC, video library and modem. There are practical ways in which the development of electronic arts can be facilitated, such as a centre where programs can be tried, artworks developed and, most importantly, where equipment and technical advice can be hired at low cost so that a great range of organisations can bring artworks and experiences to their communities. This concept seems to have slipped through the net of *Creative Nation* applications, but a concerted museum effort could ensure that everyone has a chance to experience the millennium extolled by multimedia enthusiasts.

Gael Newton
Curator of Australian Photography,
National Gallery of Australia

References

(1) Jeremy Benthall has used the title of Whitman's poem *I Sing the Body Electric*, 1855, as the title for his own book: Benthall, J. 1976, *The Body Electric: Patterns of Western Industrial Culture*, Thames & Hudson, London, p. 13. This sees a recoil to the body as an inherent response to large-scale technological change. For Whitman's emblematic status at the turn of the century see: Linton, Norbert 1980, 'The New Age: Primal Work and Mystic Nights' in *Towards a New Art*, Tate Gallery, London, pp. 9 – 21.

(2) The National Gallery has some 200 video and super8 or 16mm films, large installations in audiovisual format and works involving light. The latter have been exhibited separately as 'Lightworks 199' and were reshown at the MCA, Sydney, in 1995.

(3) Selections from the KZM permanent collection were exhibited at Karlsruhe for the first time as part of the Multimediale 4 festival in May 1995. A substantial catalogue of the video holdings of the Centre Georges Pompidou has also been published by curator, Christine Van Assche, who does not see the collection escalating quickly to include very complex interactive works.

(4) Alan Froud, Assistant Director at the National Gallery, Canberra, recently visited the USA and Europe and found that of 25 museums surveyed, most have no plans for massive digitising of their collections for internal or external purposes. Despite the success of MicroGallery at London's National Portrait Gallery, only two of the 25 museums visited plan to develop large access galleries. Museums with rich collections of old masters, which are blessedly out of copyright, are infinitely better placed to develop CD-ROM systems than those museums with largely late 19th- and 20th-century collections.

Challenging Education: Interactivity or Inactivity?

by Cathie Sherwood and Ann Baillie

Recently, Cathie Sherwood, Lecturer in Information Technology at Griffith University, and Ann Baillie, Manager, Education and Visitor Services at the Powerhouse Museum, 'met' on the Internet to discuss new technologies and their impact on education and museum programs.

In times of change, learners inherit the earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists.
(Eric Hoffer)

Cathie

We live in exciting times. The world has opened up for our children in ways not dreamed of by our parents, or even by many of us. In the wake of startling advancements in technology some areas of human activity such as telecommunications, entertainment and transportation have undergone megachange. School, however, is a notable example of an area that has not. Most current educational systems were designed for the industrial age in which the human mind, the book, paper and pen were the major aids to the storage and processing of information. While many schools have invested considerable sums in new information technologies, their basic design remains relatively unaltered. In many instances, the use of technology is simply to reinforce or support the didactic teaching style of many teachers. While there have been changes in the way we educate our children, these have not substantially altered its nature.

Ann

In contrast, some museums have a vision to prepare people for the future. The Powerhouse Museum has a commitment to educating people about information technology, to prepare them for the future by providing opportunities for interaction with new technology, and by encouraging people to consider the implications of its use. Thus, museums whose collecting and communicating areas cover information technology perform not only an important informal educative role for their general visitors, but also for those who visit on organised excursions as part of their formal education. Increasingly, these education visits support and extend the classroom's curricula. Museums can feature

Apparel CAD competition, part of Workskill Australia's National Technology Challenge at the Powerhouse Museum. Photo: Sue Stafford, Powerhouse Museum.

programs that inspire students in the formal education system about the possibilities of information technology; the same program can also be inspiring for adults when they see secondary and TAFE students functioning so well in the information age. The Powerhouse recently featured Workskill Australia's National Technology Challenge which showcased Australia's youth competing for national awards in apparel CAD, architectural computing, CAD mechanical, and information technology software applications. Every vacant space in the museum featured a dynamic portrayal of innovative applications of computer technology. It attracted thousands of students and teachers. The Workskill event complements a program of student exhibitions and showcases today's new technologies and the talents of young people who are becoming experts in their use.

I hope the picture you paint of schools is more depressing than it need be. I think there are exceptions, and some innovative schools are using multimedia technology for really participative purposes – would you agree? At EDUTECH 95, I was impressed by the number of primary schools represented and by some of the projects happening around Australia.

Cathie

In the primary arena, particularly, there are many schools where the use of technology is an integral component of the curriculum, but I suspect that even in those schools information technology has still not brought about any major changes to the way children are taught. Experimentation, risk-taking, flexibility, autonomy – all desirable attributes in a technological era – are antithetical to the traditional classroom and to traditional instruction. Changes are necessary if children are to acquire a mode of learning that places responsibility on them and allows them the freedom to try, to test, to innovate and be creative. Children will need to know how to learn, how to cope with change, how to build and evaluate a body of knowledge that will evolve throughout their life, and how to adapt to a changing work environment.

Kimberley Rose, from Apple US, talks about the employment of technology in classrooms as 'telling technology' and 'doing technology'. Students passively viewing a video or multimedia application on the destruction of the rainforest is an example of 'telling technology'. 'Doing technology' involves the same group of students studying the same phenomena and viewing the same video, but also actively acquiring data, comparing opinions and information with learners and experts around the globe, and interacting with the multimedia application.

Ann

Yes, the most meaningful use seems to be where students can participate and create, rather than just receive information. Our SoundHouse educator, Peter Mahony, is doing inspirational work with students, people with disabilities, youth at risk and so on, using the latest in MIDI technology and special access interfaces for people with disabilities to communicate the personal and the creative. They can discover their own musical creativity by using electronic equipment at the forefront of music and computer technology to compose, orchestrate, record and even perform their own music. The Powerhouse SoundHouse facility grew out of the development of the 'Real wild child: Australian rock music then and now' exhibition and the desire to feature, attract and involve youth.

Cathie

We have a whole generation of students who see the computer and related technologies as 'theirs'. Fred DiIgnazio says children of today are: 'fed a steady fantasy diet of MTV, one second video and sound bites, Ninja Turtles, Wrestlemania, Stephen King, Nintendo, high powered commercials, and jazzed up movies with computer synthesised special effects and digital, high fidelity surround sound...And then the school bell rings. Our children scramble into schools and leave the outside world behind. They close the classroom door, and the turbulent sea of images, rotating text, voices, music and sounds disappear. The tide recedes. The sea dries up. And in its place is a tiny trickle of numbers and words – a spoken stream flowing from the mouth of the teacher and a printed stream slowly scanned on a page in a textbook.'

Teachers cannot be expected to teach their curriculum area in a series of 30 second jazzy commercials each day – education is a serious endeavour. But unless preventative measures are taken now, the discrepancy between the world of the classroom and that of the classroom's clients will continue to widen to such an extent that it may be irreparable. Schools need to review their mission and teachers need to reconsider their roles and use advanced teaching strategies and advanced technology to bring 'knowledge' into their classroom in different ways.

Australian schools will soon be linked to the educational network (EDNA). The possibilities for providing a different type of education are enormous and can only have positive benefits for those schools willing to do more than just bend the technology to suit current modes of operation. The combination of on-line services and computers can allow real interaction and active exploratory education instead of just passive listening. The school library, for example, can be a state-of-the-art resource for students to learn research skills. Include the automated catalogue, CD-ROMs on various subjects, and link students to the Internet where on-line information on a variety of topics can be accessed. Create video libraries of experts that are accessed through sophisticated software and have libraries and museums on-line with a guide to help us understand what is available.

Ann

Virtual libraries using the Internet seem to be a viable option now. Museum World Wide Web sites offer tempting options for those who have time to browse. Museum sites do not replace the real objects but provide an outreach service for information, entertainment and interpretation of museum collections, exhibitions and professional research of staff. Like any new communication medium, the etiquette for the user is still evolving, as are the design parameters to best exploit it.

The Powerhouse offers demonstrations of the Internet for visitors who've heard the hype and want to see its potential and limitations. There are many issues raised by this cyberspace medium, and it is our aim not just to demonstrate the technology but also to provide opportunities for all kinds of visitors to consider these issues.

The Powerhouse recently hosted The Biennale of Ideas, the first part of the 10th Biennale of Sydney, which included talks and forums on the ways cyberspace has redefined concepts of art, architecture and design. Some of the issues concerned sexuality and identity in cyberspace, the reliability of information found on the Internet and the credibility of identity. But I think an even more pressing issue is one you have identified, and that is teacher training.

Cathie

Teacher training is a key issue and one which is not easily resolved. We need to have teachers at all levels of education focus less on the content and more on the process, and to concentrate on the cognitive processes needed in a rapidly changing world environment. Interactive technology, either stand alone or on-line, can support the enhancement of higher order thinking skills in students. For example they can use hypermedia tools to create interactive computerised projects, or assignments that incorporate text, video, graphics and sound. In producing such presentations students enhance and extend their analysis, evaluation and synthesis skills and develop sophisticated communication skills.

Providing student access to the Internet will open up a world which is truly global and crosses geographical, cultural and physical boundaries. While there is some questionable material there, this should not prevent children and schools from connecting to the worldwide network and benefiting from its extraordinary riches. Students need to be *educated* to use the web rather than be prevented from accessing it: there are now hundreds of web sites devoted entirely to children. We need to take the middle ground: acknowledge there will be nasties, but go ahead because the benefits far outweigh the unpleasant aspects.

Rather than isolate students, computers and related technologies seem to generate new reasons and ways for users to collaborate and cooperate. Because these technologies are complex, users must consult one another in order to use them successfully. Often, just using the technology means learning problem solving, cooperation and creative thinking.

Ann

The desirability of this collaborative approach to learning with technology is reflected in the design of our new Information Technology Centre. The layout allows a group to face each other and interact with or without the computers which are, of course, networked to each other and to the Internet via a fast link. The centre's program integrates technology into the museum visit, such as the use of digital cameras in the exhibitions to document objects or displays for use in the students' own projects. There is a deliberate focus on the integration of information technology applications across all curricula areas. Gone is the approach of learning about the computer, instead the computer is a tool to be used to enhance learning.

Cathie

That approach sounds great! Active learning is clearly an educational direction for schools as well. The use of interactive learning technologies can not only stimulate active learning with the technology itself, but some research shows that students interact more in a computer room than they do in the classroom. One way to stimulate participation in active learning is to make the learning process and its products meaningful and relevant, focusing on real problems that may be community based. In a world where knowledge, skills and values become obsolete more rapidly, education can no longer be reserved for the early years of life.

Ann

Museums, too, have a clear role in education for life. In addition to the responsibility for museums to cater for the needs of formal education groups at all levels, they will continue to play a valuable role in informal education for visitors whether they be family groups, teenagers, adults, tourists, residents from a range of culturally diverse backgrounds, those with special needs and so on.

Cathie

Most of today's students continue to learn in the classroom, but tomorrow's schools will be different, they will not be schools without walls, but rather schools whose walls do not confine learning. Students need to be able to utilise these new learning systems, work at their own pace, and succeed using their own personal learning styles. In order to achieve these goals we need to individualise education and simultaneously widen its scope. Technology is a major resource with which we can realise our goals.

Cathie Sherwood: email: c.sherwood@edn.gu.edu.au

Ann Baillie: email: annb@phm.gov.au

The National Museum of Australia: a case study in museums, multimedia and communication technologies

A national framework

Creative Nation, the Commonwealth's cultural policy, emphasised how communication technologies have become an integral part of Australian education, corporate culture and community life. It profiled the National Museum of Australia (NMA) as a key organisation in the provision of national and worldwide access to information about Australia's cultural heritage to those other museums and individual users to which it is electronically linked.

Integrating multimedia and communication into the corporate plan

The emphasis on multimedia and communication technologies is reinforced in the *National Museum of Australia Corporate Plan 1995 – 1998*. The plan acknowledges that NMA must be adept at pursuing new opportunities in the field of communication technologies. Ultimately, NMA will have an electronic infrastructure to store, manage and use its information resources. There will be totally integrated management and technological support of museological activities. The infrastructure will access networks capable of reaching worldwide audiences through libraries, educational institutions, homes and other museums.

Getting started

Multimedia access to museum collections involves the transfer of text and images into digital format. Museums are computer based and produce digitised text as a matter of course, but digitising images is a more complex process. As an initial step, NMA has started digitising its collection using staff and a basic digitising system comprising: a video camera (for video and some still images), an ion digital camera (for still images), a slide adaptor (for standard transparencies), a flatback scanner (for documents and existing photographs), a lightbox (for large format transparencies), and a computer with a 20 inch monitor.

With this basic system and appropriate training, museum staff can now capture images of a range of objects. The digitised images are saved to a hard drive and then linked to the existing collection management system.

Managing museums better with multimedia

NMA is co-developing a new multimedia based museum management system (PRism) with a private sector company, Digital Information for Collections. PRism enables digitised information to be retrieved for the development of exhibitions, educational programs, publications (paperbased and electronic), enquiries from researchers, special interest groups and the public. The five 'modules' – public programs, exhibitions, conservation, accessioning and loans – can be used as stand alone modules or as an integrated management system.

Staff are now being trained and are providing valuable feedback on the system's functions and effectiveness.

CD-ROMs: a new way of communicating

NMA has moved to develop CD-ROMs based on aspects of its collection. Computer interactives have been an integral part of our exhibitions and a reversioned interactive, originally designed to assist in the interpretation of Old Parliament House, is the museum's first CD-ROM. *Prime Ministers of Australia,* aimed at primary and secondary students, was developed with a Canberra-based company, Interactive Multimedia, with assistance from the Parliamentary Education Office.

As a member of the successful consortia in the first round of Australia on CD funding, a major new project for NMA is the CD-ROM *Tales from the kangaroo's crypt: four billion years of extraordinary Australia*. Using animation to recreate past environments and life forms, it brings together a research base of material from the University of NSW, the Riversleigh Society, the ABC and NMA. Sydney-based multimedia developer, Unlimited Energee, will produce the CD-ROM.

On-line publishing: policy development

NMA's prototype home page was installed on the Internet in April. With our server fully operational by late October, a more sophisticated, interactive and informative home page will then be available. A team of curatorial, marketing, public relations, education and registration staff are developing an electronic publishing policy which has as

A report on the Melbourne Archdiocesan Catholic Archives and Museum's electronic archival and retrieval project, featuring Curator, will appear in the next issue of *Museum National.*

its starting point that on-line or CD-based publishing presents a vastly different set of problems and opportunities from traditional print media publishing.

NMA played an integral role in the ACT-based Cooperative Multimedia Centre bid. If funded this centre will provide a 'multimedia home' for research and development programs aimed at cost effective solutions to the information/communication technology issues facing museums and other cultural institutions.

Some hints, tips and lessons for museums

Museums pursuing a multimedia future face a dangerous and difficult endeavour. The frustrations are many and resolve must be high.

- *Everywhere there are emperors with no clothes!*: it is possible to get totally bamboozled and intimidated by purveyors of the idea that the 'information superhighway' will pass museums by unless they purchase X or Y system. Ensure multimedia developers or information technology companies talk plain English and if you don't understand them the first time, make them say it again!
- *Plan for multimedia or information technology as you would plan for other projects:* is this the most appropriate way to say what you want to say? Who is your audience? What sort of contractors do you need and what can be done in-house? How will you evaluate the project?
- *Ensure staff training and development programs are in place, including opportunities to learn about and debate multimedia:* staff need to feel comfortable with the concepts and technology associated with multimedia; informal methods can be the most effective (invite multimedia experienced people to have lunch time discussions with you and your staff) as the 'fear' and 'ignorance' factors are minimised.
- *Be vigilant about protecting your intellectual property, or the property you have custody of for others:* there is still considerable confusion about the use of intellectual property in multimedia format, and it is essential that you ensure the rights of copyright owners are defended.

For museums wanting to start working with multimedia there is still plenty of time, but you may as well start now as anytime! The rhetoric of the multimedia industry has built up the notion that 'you'll miss the boat unless you hurry up'. In fact, there will be many multimedia boats to catch. There are many debates ahead before cultural institutions and the community decide together how multimedia best suits the needs of the content providers and also the users.

Margaret Coaldrake, Director, National Museum of Australia

Louise Douglas, General Manager, Product Development

New Technologies Create New Opportunities at the Museum of Victoria

Rediscovering the Museum

By the time this article is published, many new technology opportunities will have presented themselves to the museum industry worldwide. In fact the very term 'worldwide' has now been appropriated by one of these new technologies, namely the World Wide Web. Appropriation is the name of the game. In the USA, Microsoft Pty Ltd is copyrighting the word 'bookshelf', and companies such as Continuum Productions, a Bill Gates subsidiary, are trying to acquire perpetual electronic publishing rights of museum material.

To many museum professionals the speed at which information technology is changing is bewildering. How does a museum understand what is happening, come to grips with such change and decide which, if any, of these new technologies to use? What does it mean for the traditional museum that has evolved over more than 100 years?

The Museum of Victoria (MoV) has been working through these questions since mid 1994 through a consultancy which looked at the external opportunities provided by technologies such as CD-ROM, on-line services and the Internet. The MoV has long been aware of the potential of this area through the implementation of information technology for collection management purposes, the use of interactive multimedia for exhibitions, and the implementation of the network infrastructure to link the many museum sites.

The initial three month phase involved workshops and provoked much internal debate. Simultaneously, the consultant researched market trends, the development and potential of these technologies, and whether the museum could take advantage of them. The museum had to think seriously about the marketplace in terms of definition and technology, whether or not products should be commercially orientated, and what would constitute such a product.

The final report in October 1994 stressed that:

- the technologies of CD-ROM and on-line services were mature enough in terms of market penetration within Australia to consider developing products;
- the museum was not a multimedia producer and should form strategic alliances with commercial companies to produce, market and distribute such products;
- the museum should prepare collection materials for such products;
- the museum should implement a series of pilot projects to gain experience;
- the museum should produce market orientated products.

Importantly, the report defined the relationship of the MoV to the new technologies as one of **content and reputation**, built over 140 years of traditional museum activity: collections, research, education, interpretation, exhibition development and publication. In other words, the very strengths of the traditional museum are its most valuable assets in relationship to the new technologies. This may be a pleasant surprise, but complacency must be warned against for this is built upon the assumption that such content is readily accessible. How many museums would allow open-ended access to their existing databases for the general public without having to massage the material to make it meaningful? The nature of the new technologies with the emphasis on access, speed and interactivity means that for museums to capitalise on their **content and reputation,** *museums must be better at what they traditionally do!*

Museums must adopt a critical attitude and examine their core functions, and assess how well they are fulfilling their current strategies in terms of the museum and their traditional audiences and markets. New technologies will change how museums operate, reach their audiences and fulfil strategic goals, but these technologies also offer the means for museums to be more productive, responsive and relevant.

Anne Diplock's case study showed that Scienceworks had failed to reach the majority of major publishers, a market it had previously assumed was being serviced. The phased introduction of appropriate technology will allow the museum to better service this market, and allow the process to be applied to other areas within the museum.

David Demant also discusses how museums can better service a traditional market through market orientation and the choice of appropriate technology and relevant content.

As a result of the initial consultancy, the MoV has incorporated this approach into its overall strategic directions and with the assistance of the Victorian Cultural Industry Development Scheme, has established a business network with Telstra and the Victorian Department of Education to implement a pilot project to deliver on-line curriculum-based materials to Victorian schools. Scheduled to begin in February 1996, it will allow the museum to investigate a range of new technologies within the relationship of one of our most important and traditional markets. In the process, the Department of Education will rediscover the museum and, perhaps more importantly, so will the museum.

Matthew Nickson
Senior Curator – Multimedia, Scienceworks

New Technology, New Opportunities

This is a précis of a 1995 report entitled ***Marketing the Museum – A Case Study: The Multimedia Collection,*** *which was the result of a feasibility study on producing a promotional CD-ROM on the Museum of Victoria's collection resources.*

The Collection

The Scienceworks Multimedia Collection consists of photographs, trade literature, prints, lantern slides, postcards, sound recordings and other forms of media the Science & Technology Division had historically treated as separate collections. By applying methodology developed for *The Biggest Family Album in Australia,* it was decided to develop a new database to embrace a range of collection items and treat them as individual information sources. An important strategy of the multimedia database development has been the incorporation of images as an integral part of the individual collection item record.

Survey: Public Access to Picture Collections

To ascertain the type of access that public and professionals have to picture collections, the charges that apply and who uses these services, a survey was conducted on 25 state and national cultural institutions throughout Australia.(1) The survey indicated that 60% of images obtained from picture collections are for publication purposes, and that 40% are for private use.

Market Research

Further research conducted on a selection of major Australian and international publishers determined how they use picture collections, how they find out about them, common types of promotion and whether they would prefer printed brochures, CD-ROM or on-line services.(2)

The most common form of promotion to publishers is through printed catalogues from commercial picture libraries and, to a lesser but increasing extent, CD-ROM photo catalogues. On-line services are currently available, but publishers are hesitant to use these for picture research due to a lack of familiarity with the Internet, concern that it is time consuming and expensive, and not knowing where to find content or how to activate it. Many did note, however, that with advances in technology a combination of CD-ROM and on-line services will soon be an accepted way of doing picture research.

Another important factor is that commercial photo libraries are limited in their ability to provide historical material whereas state museums, galleries and archives are rich storehouses of this material and are ideally placed to satisfy this niche market. The issue for cultural institutions is not competition with collection content, but a lack of profile in the consumer market place.

CD-ROM as a Promotional Tool

CD-ROM is the most cost effective way of delivering information that does not require updating, such as historical records. On-line services offer many advantages but cost is not one of them. The current cost advantage of CD-ROM compared to on-line services is not expected to disappear, rather it is expected to increase due to advances in technology.(3)

As a promotional tool, CD-ROM suits some products far better than others. The Scienceworks Multimedia Collection is appropriate for promotion through forms such as text, images, audio, video and animation that can display, simulate, explain and encourage the user to engage with the collection.(4) This would be more difficult to achieve on a floppy disk and impossible in a printed brochure. The CD-ROM user can access multimedia information in a non-linear manner, which allows interaction and exploration. The large storage capacity of CD-ROM allows for intricate graphics and interactive components that do more than just highlight and promote a sample of the collection, they can also provide interactive tutorials which teach the user how to search the database.

However, this is where the advantages grind to a halt. The material on CD-ROM is static, and although it has a large storage capacity, it can only hold a small sample of the extensive collection. On-line services, on the other hand, can potentially hold unlimited information.

CD-ROM Hybrids

New technologies, such as hybrid CD-ROMs, offer great potential to the static nature of the CD-ROM. The benefits of both CD-ROM and on-line services are combined by a hybrid system, which is embedded control software allowing seamless integration of information from one source to another.(5)

The CD-ROM hybrid installs the control software onto the computer hard disk, and updated or additional information from on-line services can be directly accessed as required. This process seamlessly combines new data with the original CD-ROM, and the new information is automatically saved to the computer's hard disk for future reference. Hybrid systems provide the capability for doing basic research on the CD-ROM and updating the information by means of direct on-line access. The key advantage of this hybrid is the speed in which information is located and downloaded, thereby cutting the costs of on-line services.

Promotional Strategy

Production of a promotional CD-ROM depends on market segments, the associated service, competition and content: if one section is weak, it will have a direct impact on the overall success. Through research and analysis, weaknesses in these sections were identified and the promotional strategy was broken into three stages:

One – to satisfy the immediate need of the major market segment for the Scienceworks Multimedia Collection a promotional brochure is required to explain the resource, its content, the service offered, how to use it and who to contact. This will include a registration card for potential users to complete if they are interested in future developments for alternative access to this resource, such as CD-ROM and on-line services.

Two – to establish a database of information received from the 'registration of interest' as well as current users of this collection resource. This information will eventually become valuable data for monitoring and evaluating the level of interest from various market segments.

Three – to evaluate the 'registration of interest' database. Information on the database will have been collated to provide quantitative and qualitative information on demand for further promotion through either CD-ROM or on-line services, or a combination of both. Research has indicated that a CD-ROM hybrid offers cost efficient access to on-line services, as well as being a user friendly, interactive tool to introduce the user to the collection content.

The promotional plan has been developed to take account of current and future market needs using existing resources and available technology. The major market segment has identified interest in knowing more about accessing the MoV's rich collection resources, and this can be provided through methods that reach the broadest potential target market. The consumer markets for CD-ROM, multimedia and on-line are expected to grow significantly and this product will position the museum at the leading edge of multimedia and information services offered by cultural institutions in Australia.

Anne Diplock
Curator, Multimedia - Scienceworks

References

(1) Diplock, A. 1995, *State of Play: Public Access to Picture Collections*, pp 1–14 (unpublished – MoV)
(2) Diplock, A. 1995, *Market Research: Publishers*, pp. 1–4 (unpublished – MoV))
(3) Wiedemer, J. D. & Boelio, D. B. 1995, 'CD-ROM Versus Online', *CD-ROM Professional,* Vol. 8, No. 4, pp. 36–43
(4) Herther, N. K. 1995, 'CD-ROM at Ten Years: The Technology and the Industry Mature', *Online*, Vol. 19, No. 2, pp. 86–93
(5) Reisman, R. R. 1995, 'CD-ROM/Online Hybrids – Missing Link?', *CD-ROM Professional,* Vol 8. No. 4, pp. 67–74,

Looking both ways before stepping onto the information superhighway

A new and innovative program is available to schools at Scienceworks, the Museum of Victoria's Science and Technology Centre. The program combines the traditional resources of the museum with the most accessible information technology. Basing itself firmly on its heritage, the museum is stepping carefully into the future. There is nothing flashy or super hi-tech: the museum examined the current situation in a specific area of education and has supplied a product that addresses a clearly expressed need.

The program is specifically designed for Victorian Certificate of Education (VCE) Information Technology students and teachers, who are currently resource-hungry. There is an enormous amount of information 'out there', but teachers and students do not have the time nor the resources to access it easily. The VCE program is part of the museum's strategy to control that flow. The material is packaged, in terms of language and format, to enable students and teachers to make their own use of the material. However, the program is not a set of recipes to be slavishly and mindlessly copied. In order to ensure that the product would satisfy the specific needs of VCE Information Technology, Scienceworks worked closely with the Victorian Information Technology Teachers' Association (VITTA). The program is generously sponsored by the Gas and Fuel Corporation of Victoria.

The program provides teachers and students with a justification for visiting Scienceworks, the museum gains experience in developing market specific programs, it also makes accessible more of the museum's collections, and it is a step forward for the museum in addressing new ways of communicating information.

It consists of three sections:

1. Data and Decisions – an activities kit containing a series of integrated activities to be completed at school and during a Scienceworks visit. These enable students to complete a number of the work requirements and key concepts in two units of the VCE. A data disk (Windows or Mac only) on air pollution is included for one of the activities in which students gather air pollution data on the day of their visit to Scienceworks. Students will be able to use the historic Pumping Station as the context for an entire unit allowing all work requirements to be approached from a common perspective. Other activities concern traffic flow, failure of systems, mass production, weather monitoring and climate modelling.

2. Presentation at Scienceworks – using objects from the museum's collection, a Scienceworks presenter will provide glimpses of the history of information technology. A teachers' information sheet is included in the kit.

3. Sand to Silicon – a database on a disk (Windows or Mac only) detailing many of the devices associated with the evolution of information technology over the past 4000 years. The database, with its teachers' guide, is designed to assist VCE Information Technology students to complete work requirements across all units of the VCE. The teachers' guide suggests strategies using real life situations to illustrate ways in which students can tackle their work requirements using the database.

Scienceworks decided to produce the database on a single disk because it discovered, at the time of production in mid 1994, that the overall school market is not ready for a CD-ROM. This is not so true in 1995. The single disk provides most teachers and students with an easily accessible database that can be used in most classroom situations without fuss or technological barriers.

David Demant
Manager, Education - Scienceworks
Contact Scienceworks on (03) 9392 4819.

Electronic Imaging And The Visual Arts

EVA '95 conference, National Gallery, London, July 1995

EVA '95 addressed computer technologies, specifically digital imaging with textual databases, in the museum and gallery environment. Digital imaging of visual culture seems to be looming on our doorsteps and is surely one of the most hotly discussed topics in museum circles. Although many collection imaging projects have begun in Australia, the EVA conference showed how much we can learn from the dynamism and diversity of overseas examples.

The conference featured over 34 papers from a range of international speakers. I was able to gather information concerning the implementation of digital imaging projects based on institutional, financial, staff and user needs. With a focus on project development, many speakers stressed the importance of prototyping multimedia access systems, and the need for continuous reassessment as user needs, technology and financial resources change. The multidisciplinary nature of multimedia projects in museums was also evident, as developments in technology encourage professional collaboration between museum staff, education professionals, information technology experts and graphic designers, to ensure the most successful user interface and educative experience.

Case studies ranged from large, multi-institutional projects to small, single-site projects. All addressed similar issues: the choice of technologies and means of access, problems of copyright, and the expertise and finance needed to develop an accessible and educational product. It was instructive to see the collaborative nature of the most successful projects. Funding from the European Community (EC) has allowed projects such as ESPRIT and MUSA (multimedia and preservation of cultural heritage in Italy and Germany) to combine expertise from a number of separate European institutions. VAN EYKE (Visual Arts Network for the Exchange of Cultural Knowledge), under the EC libraries program, is another prominent project developing software for the exchange of both textual and visual catalogue information between archives. Partners in this project include the Witt Library at the Courtauld Institute in London, the Rijksbureau voor Kunsthistorische Documentatie at The Hague, and the Art History Department at Trinity College, Dublin. Getty AHIP (Art History Information Program) Imaging Initiative is also promoting American and trans-Atlantic projects, such as the Museum Educational Site Licensing Project, and the development of the computer index at the Witt photographic archives.

Developmental problems and potential technological obsolescence were discussed at length. With the constant evolution of imaging technologies the issue of when and what to buy is a very real dilemma in terms of in-house use and marketing potential. We were urged to be positive and to purchase technology to initiate imaging projects, with the understanding that the quality of original data captured and the independence of the data from the computer software and hardware were essential to future accessibility. To ensure longevity of the data as both an archive and resource, data must also be regularly migrated to the most current technologies. Some rapidly outmoded technologies cited included the CD-i, and even CD-ROM was given an obsolescence lifespan of only another five years. On a more cheerful note, projects begun on now outmoded technology can still be successful. The Maritiem Museum 'Prins Hendrik' in Rotterdam, for example, has recently used CD-i technology to create *The Flying Dutchman*, an educative adventure voyage to the East Indies, which uses a selection of the museum's objects and documents and has sold well in the first year of publication.

EVA '95 demonstrated the overwhelming choice of digital imaging technologies now available to museums and galleries. These ranged from relatively simple on-line text-plus-image catalogues, to multimedia CD-ROM and sophisticated 3-D modelling. Each format serves a different function and can be accessed by in-house staff or the public, on-line or by disk, worldwide on the Internet, or any combination of the above. The variety of situations to which technologies can be applied was illustrated by examples ranging from the Museum of Cycladic Art in Athens, the first Greek museum to pioneer the use of digital imaging for both research and access to its archaeological collections, to The Regency Townhouse in the UK, which, as a small institution, relied on donated materials and expertise to create an educative program entitled *A Regency Promenade*. This allows users to access the museum's archives and objects in digital form, through the navigational metaphor of strolling along the beach front in nineteenth-century Brighton. Other projects, such as *The Story of Glass*, a multimedia CD-ROM developed by the Victoria & Albert Museum and the Corning Museum of Glass in New York, incorporate simple graphics and interface with real-time videos of glass production, using as its basis some 250 glass objects from the V&A and the Corning. The Corning is also using the CD-ROM to develop innovative access programs for special needs users.

Public access to technologies in museums also varies greatly. Some institutions, such as The San Diego Museum of Art and the National Gallery in London, have physically isolated technology from the artworks themselves. Both museums use a kiosk system of sit-down study terminals in a room separated from the main galleries. Other alternatives include the regular dispersal of terminals throughout the gallery space (as in the V&A glass gallery) or the use of hand-held bar code readers, whereby visitors electronically gather catalogue information on individual objects, which is then printed out at the end of the visit.

Ambivalence about the possibilities of publishing collection catalogues on the Internet was evident throughout the conference. The problems of policing copyright, illegal use of visual files by hackers and corruption of data, including the accidental or deliberate separation of the images from their textual information and ownership context, were of particular concern. Many

museums are awaiting further research and the development of more advanced technologies to provide better protection of material before risking their collections on-line. Existing protective measures include obligatory licensing and user registration, plus user-pay systems to access material, digital watermarking and the provision of only low-resolution images. The Bridgeman Art Library in the UK, which supplies publication images from a massive bank of transparencies lodged by many of the major art institutions in Europe, relies on watermarking, image tagging and limited image quality to prevent commercial exploitation. Unfortunately, the success of many of these measures relies on the policing of copyright, which at any time is difficult, and becomes virtually impossible on the Internet. However, while many institutions are not ready to risk their collections on-line, some projects take advantage of the benefits of promoting their material on-line in spite of the risk. The Brazilian Contemporary Art Project, for example, is creating a substantial digital archive of the works of living Brazilian artists. Directors of the project hope to take advantage of international access to the resource via publication on the World Wide Web.

The emergence of new technologies for digital imaging is allowing museum professionals to explore the amazing potential of increased public access, education, and more efficient collection management. Although complex, expensive and time consuming to research and implement, imaging projects seem to be an inevitable step forward. Many museum professionals in Australia probably find themselves in the same position as myself: having to understand the opportunities and pitfalls of digitisation in the maze of new technologies in order to push institutions speedily into the digital age.

Heather Lowe
Curator – Collections Management,
The University of Melbourne Museum of Art

AMIS – the Australian Museums Information System Heritage Collections Committee collaborative database developments

Since its establishment in late 1994 a major initiative of the Heritage Collections Committee (HCC) has been the development of a national database for heritage items of cultural, historic and scientific interest. After consultation with representatives from all types of museums across Australia the HCC's Database Working Party has developed a distributed database network model for AMIS, the Australian Museums Information System.

The AMIS concept envisages linking existing museum databases as a collaborative distributed network, accessible through the Internet. It also proposes to give users integrated access to information about museum exhibitions, visitor programs and facilities, as well as collection information.

The development of AMIS will be a staged process. The initial phase of consultation and basic planning has now been completed. In the first stage an AMIS coordination unit will be set up to establish a World Wide Web site for AMIS. This AMIS site will initially comprise a directory of Australian museums to demonstrate the potential of electronic information exchange for increasing accessibility and to encourage the development of an Internet culture within museums. Museums will be invited to contribute data about their 'top ten' items as a way of making more detailed collection information available on AMIS and adding local colour. An important component of this stage is a collection documentation survey which will establish formats for recording data. This stage is being implemented through three separate consultancies.

The second stage will focus on developing the software that will allow AMIS to link and 'talk' to the many different kinds of museum databases at the item level. This stage will develop from a pilot involving a small group of museums selected to represent different types, sizes and locations. The pilot process will clarify management issues such as the levels of support, training and resources required for full participation by all Australian museums.

A pre-release version of AMIS is now available at *http://www.mov.vic.gov.au/AMIS/* The pre-release AMIS is a demonstration model created by Martin Hallett and staff at the Museum of Victoria. It includes information such as current and forthcoming attractions, services and contact details for museums in Victoria, as well as institutions such as the Powerhouse, National Museum and the National Gallery. There is also searchable item level access to a number of collections of the MoV. The pre-release AMIS will demonstrate the potential and commence the process of linking existing museum Internet sites in a way that is coherent for users. The pre-release version will enable the HCC to get feedback from users and gather information about visitor numbers and repeat visits to the Web site. Updated information about AMIS will also be available. For information contact any members of the HCC Database Working Party: Martin Hallett, Convenor – MoV; Margaret Anderson, WA Museum; Gwen Baker, Australian Museum; Des Beechey, Powerhouse Museum; Margy Burn, State Library of NSW; Caroline Carter, Arts Victoria; Erica Persak, National Museum; Warwick Reeder, National Gallery.

Margy Burn
State Library of NSW

(The National Museum of Australia has been awarded the contract to establish the AMIS Coordination Unit. A presentation of AMIS will be developed for Museums Australia's Brisbane conference. Contact Louise Douglas or Greg Ebling at NMA.)

American Association of Museums Conference (Philadelphia, USA) and the International Council of Museums Conference (Stavanger, Norway)

This year's 90th AAM annual meeting in Philadelphia attracted over 5000 delegates who could choose from the AAM's largest ever offering of conference sessions tackling today's museum issues. A trade exhibit hall was also packed with over 300 booths and delegates were treated to some truly impressive tours of museums and related cultural institutions.

The conference theme was 'Museums Educating for the Future'. In this respect it was interesting to hear the 'embattled' Jane Alexander, chairperson of the National Endowment of the Arts, comment: 'Museums not only celebrate and venerate the past... but also question, discuss and debate multiple readings of the past, present and future'. The NEA is facing a difficult battle with a hostile Congress pushing for massive cuts in its budget. In her address, Alexander made an impassioned plea for the museum community to help in the fight to save the NEA.

In July, 1500 delegates representing over 90 countries gathered for the ICOM XVIIth triennial conference in Stavanger, Norway. The general conference sessions were complemented by individual programs organised by each ICOM committee. Members of the Museum Public Relations Committee, for instance, were hosted by the Norwegian Petroleum Institute at its headquarters for sessions on marketing and sponsorship.

The general assembly formally ratified Melbourne as the location for the next triennial, scheduled for October 1998. An Australian stand in the exhibit hall attracted much interest from potential delegates and it is clear many will come to Melbourne not just for the meeting, but to experience the region and its cultural attractions.

The elections installed Saroj Ghose as president and Bernice Murphy (MCA, Sydney) as an ordinary member of the executive council. The assembly raised a wide range of issues including action being taken to fight the illicit traffic in cultural property and assisting museums to get on the Internet. The ICOM General Assembly, which could be described as the UN of museums, passed resolutions on the following: museums and their importance in their communities; protection of cultural heritage in armed conflict; training and global awareness; developments in information technologies; and of particular interest to Australia and our regional neighbours, the testing of nuclear weapons.

The ICOM congress illustrated the complexities involved in running a major international meeting. The ICOM delegates who travel to Melbourne in 1998 will have great expectations: we all have to work together to put on a good show!

Kenneth Park
Curator of Collections, Wesley College, Melbourne

Obituary – Pam Gullifer AO

Pam Gullifer, Director of Benalla Art Gallery 1989 – 1995 (awarded the Order of Australia for her exceptional services to arts management) died on 29 July this year. Pam had been very ill for some time but it was only in the last few weeks that she was unable to work. Even then, however, she continued to contribute to a variety of projects, including the demanding and important Australia Felix Visual Arts Festival.

Pam is affectionately regarded by all in the profession, artists, administrators, bureaucrats (whose lives she didn't always make easy) and everyone who is passionate about and committed to the promotion of the contemporary arts.

Pam's career was long and varied in contemporary visual arts and crafts and included a stint with the Victorian Ministry for the Arts, as part of the Visual Arts and Design Executive, where she worked with people like Andrew Porter and Paul Clarkson.

After her experience with government Pam opened a commercial gallery in Richmond, 221 Lennox Street. She and her business partner, Clinton Tweedie, gathered together an impressive stable of artists that included some of the most interesting younger practitioners around and some very established big guns.

Importantly, Pam directed several major regional galleries: Geelong, Ararat, Wangaratta and Benalla. She brought to each her characteristic verve, tenacity and particular passion for the contemporary. Recently, under her energetic stewardship Benalla continued to develop a fine reputation as an innovative and exciting gallery, with a varied program that reached across a range of constituencies. Pam added immeasurably to the significance of the Benalla collection and has made the gallery a vital cultural force in the region.

I remember Pam as a good friend to a huge number of people but she always had a tender regard for artists in particular. She was generous and warm and always ready to joke. Underneath her charm, however, there was a steely determination to support artists and the value of their work, and more generally the uniqueness and energy of Australian creativity. She was a woman who loved family and friends deeply – and was ever loyal, loving, iconoclastic, wry, funny and honest.

Victoria can be very proud of her achievements and her award. She loved her home state and marvelled at the beauty of its countryside and at the creative talent it produced. Pam was an arts professional who truly deserves the accolades. She will be missed.

Simeon Kronenberg
National Director,
Museums Australia