In September 1982, an Advisory Committee on Art and Technology was established to advise the Australia Council, and particularly the Policy and Planning Division, on issues in respect of technological developments and their immediate concern to the arts.

The Report of this Committee was submitted to the Australia Council in April 1984. The Council received the Report but made no decision on any of the recommendations, pending comment from the Boards and the development of an action plan.

The Report is circulated to interested agencies, organisations and individuals for information and comment. The Council's Policy and Research Committee will initially be considering the implementation of the Report's recommendations in June. If you would like to contribute to this stage of the debate, we would need to receive your comments by 28 May for inclusion in the Policy and Research Committee's agenda.

Jane Thynne
Acting Director
Policy and Planning

7 May 1984

PREFACE

This report analyses the effect on the arts of developments in technology.

The members of the Committee congratulate the Australia Council for forming the Committee. It is timely for the Council to have sought our advice whilst the pattern of developments is still emerging.

The report examines the impact of technology in four areas:

- its effects on artistic expression;
- its effects on the arts workforce;
- legal issues; and
- arts organisations' use of technology.

Section 1 contains the Committee's Terms of Reference and other formal parts, including a comment on the lack of resources available to the Committee. This is not a criticism of the Australia Council's initiative or of Margaret Wallace, who did much of the work and was responsible for preparing the report. The Committee is extremely grateful to Margaret for her outstanding contribution to its work.

Section 2 is a summary of our recommendations: the establishment of a permanent Art and Technology Committee with funding for extensive research and the provision and training of artists in the use of "technology".

Sectiosn 3 and 4 discuss the relevant technological developments and the detailed effect of these on the arts industry. Section 5 deals specifically with developments in the field of communications technology.

There are nine appendices.

The Committee asks the Australia Council to adopt its recommendations and publish this report.

PETER BANKI
CHAIRPERSON

ART AND TECHNOLOGY

1984 to 2001

Report of the Art and Technology
Advisory Committee to the
Australia Council, April 1984

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1. THE ART AND TECHNOLOGY ADVISORY COMMITTEE

1.1 MEMBERSHIP:

Chairperson: Peter Banki (Executive Officer, Australian Copyright Council)

Georgina Carnegie (then Executive Secretary, Museum of Australia)

Jon Hawkes (Director, Community Arts Board, Australia Council)

Michael Law (Policy Consultant, Public Broadcasting Association of Australia)

Wayne Maddern (then Executive Director, Confederation of Australian Professional Performing Arts

Janette Paramore (then Federal Organiser, Electronic Media, Actors Equity of Australia)

1.2 TERMS OF REFERENCE

In September 1982, the Art and Technology Advisory Committee (hereafter referred to as the Committee) was asked by the Director of Policy & Planning:

- To brief the Australia Council's Policy and Planning Directorate (hereafter referred to as Policy and Planning) on priorities in respect of technological developments and their immediate concern to the arts.

- To advise Policy and Planning on submissions, etc to relevant government enquiries, and assist in the formulation of such submissions.

- To advise the Australia Council on issues or areas appropriate for advocacy of legal, legislative or industrial reforms to protect the arts.

- To guide Policy and Planning on the content, briefs, selection of authors and researchers for projects, conferences, seminars, discussion papers, etc., as requested.

1.3 HOW THE COMMITTEE APPROACHED ITS WORK

1.3.1 Analysing the Issues:

The Committee began by analysing the issues as follows:

i) Technology as a creative medium capable of providing new channels and tools for artistic expression.

ii) The effects of technology on the arts workforce, in changing the number and nature of jobs available in the arts.

iii) Legal issues. The Committee focussed mainly on ways of ensuring that artists and arts organisations were equitably remunerated for their work. This could involve both the new use of existing laws, and the drafting of new legislation.

iv) Using technology to achieve greater efficiency in the arts - eg computer office systems.

v) The relationship between the arts and developments in media technology.

1.3.2 Technology: The Committee's Interpretation

The Committee discussed which technologies should be the concern of this report, noting that technologies such as bronze casting and violin making have long been an established part of the arts.

The Committee decided not to concern itself with these traditional technologies, but rather with those which have developed since the Second World War, or which are still in the process of being developed.

The Committee had two reasons for concentrating on the technologies of this period; firstly, the arts rarely exploit these technologies to the full; secondly, some of these technologies may pose a threat to some artists, as when live performance is replaced by recording.

Three common patterns appear in the relationship of technology and the arts:

Under-utilized technology:

- the technology may be well developed and in widespread use (e.g. television) but is not used to its full potential by the arts.

Esoteric technology:

- the technology may be highly developed (e.g. computer music) but is understood and accepted by relatively few artists and members of the public.

Developing technology:

- the technology may be still very much in the developmental stages (e.g. computer graphics, holography).

1.3.3 Choosing A Strategy

The Committee then considered ways in which the Australia Council could act.

It selected the following:

i) information gathering

ii) a review of Council's funding policy

iii) the dissemination of information to artists and arts organisations

iv) advice to the Commonwealth Government

v) advocacy .

Each of these courses of action will be examined in greater detail below.

1.3.4 Information Gathering

The Committee was concerned that there was very little quantitative or qualitative information on which to basc policy decisions.

In an effort to overcome this problem, Policy & Planning commissioned a survey on arts organisations' use of television, incorporated questions on technology in the Council's Individual Artists Survey[1] and arranged for the Committee to hold discussions with artists working in the field of technology.

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1. The Artist in Australia Today: Report of the Committee for the Individual Artists Inquiry, Australia Council, Sydney, 1983

1.3.5 A Review of the Australia Council's Funding Policies

At the Committee's suggestion, Policy and Planning conducted a survey of the policies on technology of the Australia Council's seven Boards. The findings are discussed in Section 6 below, page 37

1.3.6 Dissemination of Information:

The Committee found that lack of information was one of the major barriers to the use of technology by artists and arts organisations, who cited problems such as not knowing

- what technology was available
- which form of technology would suit their needs
- how to gain access to technology
- how to use technology
- where to turn for advice and information.

The Committee initiated several projects in an attempt to overcome this deficiency:

i) Artists' visits to the CSIRO:

Policy & Planning arranged for two groups of artists to visit the CSIRO Department of Applied Physics. As a result of this, four artists have now been selected to work in residence at the CSIRO, with access to both scientists and equipment.

ii) The Committee held discussions in Melbourne with a group of artists and with the Victorian Ministry for the Arts about the setting-up of an information exchange for artists and scientists. The Ministry for the Arts set up a pilot study to produce a directory of artists working in technology in Victoria and to investigate the possibility of creative links with industrial and research bodies. (The details of this are given on page 23).

iii) Policy and Planning distributed to aproximately eighty arts organisations a report on arts organisations' use of television.

iv) In response to recommendations in the report on arts organisations' use of television, Policy and Planning devised an action plan to encourage a greater percentage of arts programs on television. This plan involves:

- The provision of expertise to arts managers to enable them to make greater use of television
- closer liaison between the Australia Council and the Australian Film Commission
- continued negotiations with Actors Equity on the conditions relating to the televising of live arts events.
- continued efforts to extend tax deductibility to films of live arts performances

The following steps have been taken to implement this plan:

- Negotiations are in progress with the ABC to produce a series of crafts programs.
- The Australia Council is distributing free of charge to its clients copies of 'How to Use the Australian Media'.
- The Australia Council is considering the production of a computerised calendar of arts events for use by the media.
- The ABC is to record a Sydney Theatre Company production which will be evaluated by Actors' Equity as a pilot project for the televising of live performances.

v) Increasing public awareness:

At the suggestion of the Committee, Policy & Planning collaborated with the ABC on a radio series on art and technology. There has also been a special technology edition of 'Artforce'.

In the sphere of disseminating information to artists, the Committee has been able to achieve very little. Many artists seem to be frustrated by the difficulties of gaining access to new technology, and there appears to be a potential for much greater dissemination of the arts through the electronic media.

1.3.7 Advice to the Commonwealth Government

The Committee has advised Policy and Planning on the preparation of submissions on the following topics:

- audio-visual copyright
- cable and radiated subscription television
- the arts on commercial television.

These submissions were prepared in response to requests from the Attorney-General's Department and the Australian Broadcasting Tribunal.

1.3.8 Advocacy

The Committee met the Minister for Science and Technology to discuss the ways in which the arts industry needs help in adapting to technological change, and to explore the possibility of additional funds for this purpose. As a result of the meeting, an Australia Council representative participated in the National Technology Conference.In addition, the following submissions were made:

- to the Minister for Science and Technology requesting assistance with the design of portable venues and equipment for performing arts organisations
- to the Treasurer requesting that tax concessions be extended to the filming of live performing arts events.

1.4 THE CONSTRAINTS UPON THE COMMITTEE

The Committee feels obliged to make some comments about its working conditions. Its brief was, in retrospect, impossibly wide, in that all areas of technology were to be dealt with in four meetings in the course of one year. At the end of the first year, Council agreed to extend the Committee's term by six months, to April 1984. However, even the six meetings over a period of eighteen months which the Committee actually held were too few to encompass such a vast brief.

During this time, the Committee was able to draw on approximately one quarter of one Council staff member's time. For a period of about six months, that staff member was completely unavailable and a temporary staff member had to be employed, thus disrupting the continuity of the work process and causing delays in the preparation of this report.

The Committee feels strongly that each of the issues isolated in 1.3.1 above are sufficiently complex and diverse to warrant specialist consideration that this Committee, because of the size of its brief and the lack of sufficient staff resources, was unable to give.

2. RECOMMENDATIONS

2.1 ART AND TECHNOLOGY COMMITTEE

The Committee concluded that the Australia Council needs to take action in the following areas:

- research
- dissemination of information about technology
- artists' access to technology
- training in the use of technology
- use of technology to disseminate the arts

and that the Australia Council's existing structure is inadequate to carry out the volume of work required in these hitherto neglected areas. Its primary recommendation is therefore:

R1 that the Australia Council establish an Art and Technology Committee with the following terms of reference:

Terms of reference of the Art and Technology Committee:

The Committee shall

(a) be responsible for implementing the recommendations of this report, as set out in Sections 2.2 - 2.6 below.

(b) to refine, co-ordinate and monitor the implementation of policy on the arts and technology and report regularly to Council (see p. 42)

(c) initiate submissions to Government on technology-related issues such as performers' protection, audiovisual copyright and Australian content on television and radio

(d) devise strategies for meeting artists' and arts organisations' needs for access to equipment

(e) work with the Australia Council's Boards to develop policies on technology

(f) collaborate with appropriate organisations to promote the arts through the electronic media

(g) collaborate with appropriate organisations to carry out research on the audience for arts programs on television and radio

(h) examine the implications of Radiated Subscription Television for the arts

(i) assist arts organisations to acquire the expertise necessary to enable them to make greater use of television and other electronic media

(j) investigate the desirability of establishing a Media Arts Board within the Australia Council to promote the broadening of access to the arts via the electronic media

(k) develop a forward plan of action for carrying out the recommendations in this Report

(l) administer a fund for research, consultancy and pilot projects.

(m) explore the possibility of funding technological projects that fall outside the existing guidelines of the Australia Council's Boards.

(n) disseminate to artists and arts organisations the findings of its research on arts and technology

2.2 RESEARCH

The Committee found that there was very little quantitative or qualitative information on which to base policy decisions. It therefore considers that research into various aspects of the relationship between technology and the arts is of the utmost importance, and specifically recommends

R2 that the Australia Council initiate systematic research in conjunction with appropriate organisations to determine

(i) the extent to which artists and arts organisations use new technology

(ii) artists' and arts organisations' perceived requirements in the field of technology.

(iii) how these requirements can best be met

The Committee also recommends

R3 that the Australia Council initiate a study to determine

(i) what information systems already exist within, or are planned by, arts organisations

(ii) what information is needed by arts organisations

(iii) the feasibility of establishing nationally compatible information systems, and

(iv) the desirability of initiating a national information systems project
(See p. 24)

R4 that the Australia Council initiate a study to determine

(i) the computing requirements of arts organisations

(ii) the costs involved in meeting those requirements

(iii) the appropriate software and other services for various types of art organisations.
(See p. 24).

R5 that the Australia Council initiate research to determine:

(i) what demand there is for arts video-cassettes or videodiscs

(ii) what arts product is suitable for marketing via videocassette/videodisc

(iii) the economics of arts video cassette and video disc production

(iv) what help, if any, should be given to arts organisations for the production of videocassettes and videodiscs

(v) whether arts videocassettes/videodiscs be made available to the public at low cost eg. via libraries.
(See p. 35).

R6 that the Australia Council monitor the impact of new forms of technology on employment patterns in the arts, and that particular attention be paid to this factor by Council's Boards when considering applications for the funding of projects, and that consideration be given to retraining programs for artists and art workers whose art form or occupation is changing radically or becoming redundant as a result of the application of technology.
(See p. 23).

2.3 ARTISTS' ACCESS TO TECHNOLOGY

The Committee considers that it is essential that artists should have access both to technical equipment and to the expertise necessary to use it to the best advantage.

The Committee therefore recommends

R7 that the Australia Council provide for up to 8 artists per year to work in residence in industrial, scientific or media organisations (See p. 22)

R8 that the Australia Council use the research, outlined in R.2 above and information about overseas art and technology centres, to assess the need for a national Art and Technology Access Centre (See p. 22)

The Committee is aware that on 3 June 1976 the Commonwealth Government announced that it would not assist capital arts projects outside the Territories, and the Committee therefore recommends

R9 that the Australia Council seek to clarify with the Commonwealth Government the meaning of its decision on capital arts projects in relation to the changing technological environment of the arts. (See p. 22)

2.4 TRAINING IN THE USE OF TECHNOLOGY

Adequate training is clearly essential if artists are to be able to take full advantage of technology. The Committee therefore recommends

R10 that the Australia Council itself, and in collaboration with appropriate organisations work to ensure that artists and arts students can receive training in the creative use of new technology

2.5 USE OF TECHNOLOGY TO DISSEMINATE THE ARTS

The Committee considers that the rapidly developing technologies of the electronic media offer a vast potential for making the arts more accessible. In pursuit of this aim, the Committee particularly recommends

R11 that the Australia Council ask the Art and Technology Committee to examine the arts content on commercial television, the ABC and the SBS with a view to making submissions on this matter to the Australian Broadcasting Tribunal, the ABC and the SBS (See p. 29)

R12 that the Australia Council continue to support the regulation of Australian content quotas on television and radio in favour of increased Australian arts programming.
(See p. 30)

2.6 FUNDING FOR THE COMMITTEE'S WORK:

The Committee recommends

R13 that the Australia Council, as a new policy proposal for 1984-85, seek $640,000 from Government for the Committee's work in assisting artists working with new technology, artists-in-residence, research, and improving access to the arts via the electronic media.

(A proposed budget is given in Appendix IX)

3. INTRODUCTION

> '...The concept of combining very high technology with art is not well accepted in Australia'. - Paula Dawson, holographer

Technology is at a disadvantage in Australian society. The arts are also disadvantaged. It seems likely, therefore, that attempts to promote technological development in the arts must negotiate a double set of obstacles; those in the way of technology as well as those in the way of the arts. In the race for funds & resources (see Appendix I) technological arts projects may be handicapped.

Australia cannot yet offer artists the technological opportunities available in the special art and technology centres overseas. (See Appendix II for examples). Nor do our laws deal adequately with issues of performers' protection, moral rights, audiovisual and software copyright. Work is only just beginning on computerising arts organisations, and the electronic media are not yet as diverse as they are in countries such as Canada and the USA: Australia has no cable television and has not yet started direct satellite broadcasting. The impact of technology on the working conditions, employment opportunities and health of the arts workforce needs further consideration, and should be taken into account in decision-making.

While other industries in Australia are trying, with increasing government assistance, to profit from the opportunities offered by technological development, within the arts industry there remains widespread ignorance of the possibilities offered by the new technologies. Their use is hindered by the high initial capital costs of some new technologies.

The Committee believes that in many instances the cost efficiency of arts production and dissemination could be greatly improved by using appropriate new technology. However, it also recognises the continuing value of traditional arts techniques.

The degree to which the arts industry uses or rejects new technology is likely to have considerable economic significance, given the size of the industry: it employs, according to the 1981 Census, 46,500 full time workers. In

The Commonwealth Government in 1983 selected several areas for development, including information technology, materials technology and communications technology.[3]

It provides support for technological development in a variety of ways, which are described in Appendix III. Extracts from the ALP platform appear as Appendix IV.

State Governments also actively support the development of technology. Appendix V illustrates the assistance available from each Government.

Table 1 (p. 17) shows Australia is weaker, in the field of technology, than all countries in the Organisation for Economic Co-operation and Development (OECD) except Greece. Australia spends less of its Gross Domestic Product on research and development than most OECD countries. Moreover, most technology used in Australia is developed overseas.[4]

According to 'Developing High Technology Enterprises in Australia',[5] there are four major reasons for Australia's lagging development:

- a lack of public and private funds to enable new development.
- a lack of necessary skills and experience
- Australia is remote and can offer only a small market
- The Australian community has not recognised the benefits that can be generated from the creation and growth of local high-technology enterprises.

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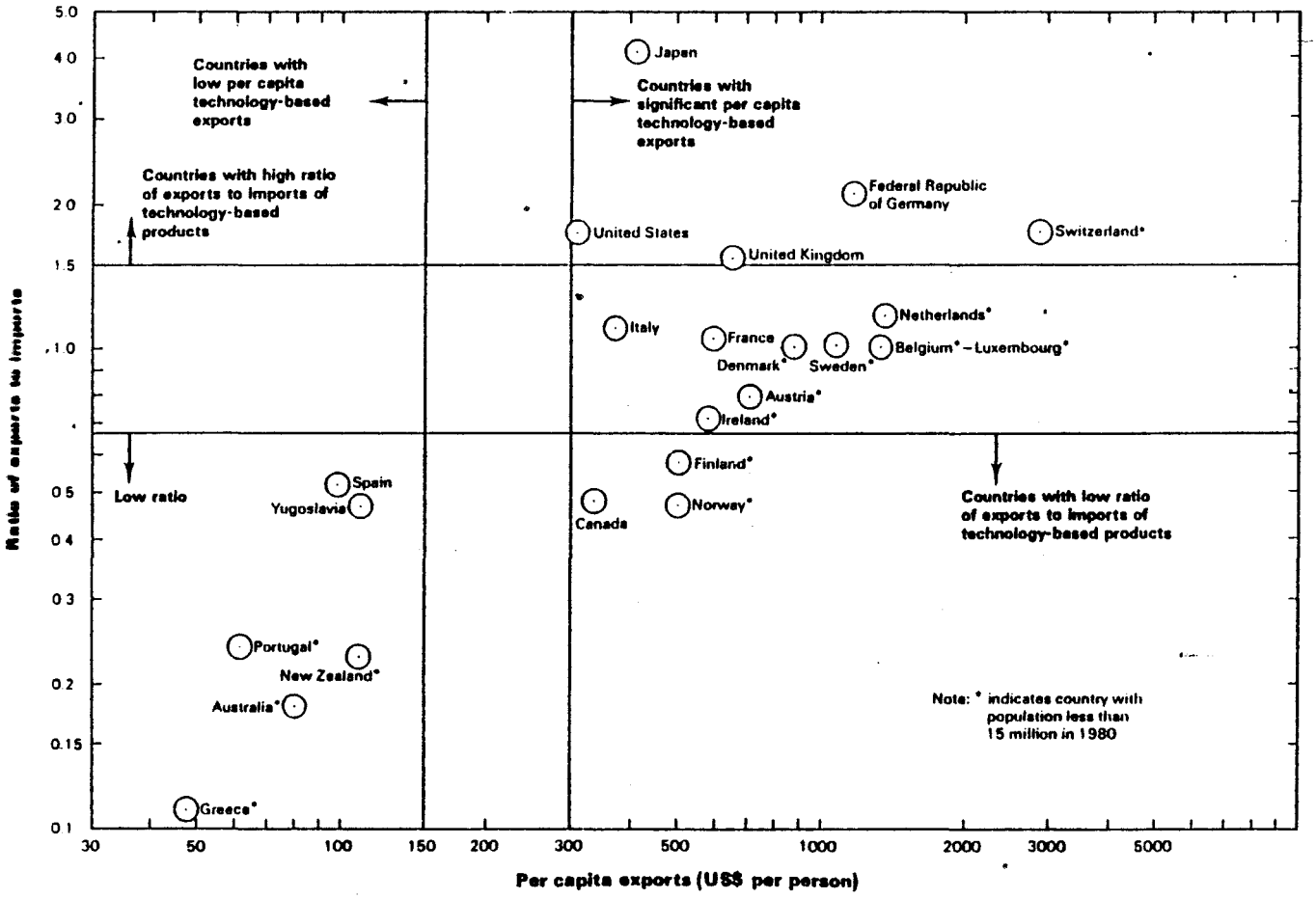
3. National Technological Conference Background Papers, Department of Science and Technology, 1983 p. 14

4. National Technological Conference Background Papers, Department of Science and Technology, 1983 pp 2 & 44

5. Op. Cit pp 1, 2 & 21

TABLE 1

Trade per head of population in broad technology-based product groups with high average research intensity.



Source: Department of Science and Technology, Science Statement 1982–83, page 155.

The Committee considers that it is impossible to predict the effects of technology on employment. The Report on Technological Change in Australia claims that

> 'there would be a large potential for expansion of employment in new and existing areas of the service sector, particularly....in jobs related to leisure and entertainment.'[6]

The Committee is not sure that this is so. Even if employment does not rise overall, there may be considerable hardship for certain groups (women, migrants, older workers) caused by redundancy and the need to adapt to changes in the labour market.[7]

3.2 THE ARTS INDUSTRY

Technology is developing so rapidly that only positive action will enable the Australia Council to keep pace with developments.

The following list of examples is given as a reminder that developments which are now commonplace and which have had a profound effect on the arts, are in fact very recent:

Sound recording:	1877 phonograph invented
	1897 first operatic recording
	1958 first stereo recordings in U.K.
	1965 first pre-recorded cassettes
	1983 first compact discs in Australia
Music:	1952 first synthesiser
Film:	1927 first "talkies"
Television:	1956 began in Australia
	1975 colour television in Australia
Photography:	1841 first photograph in Australia
Radio:	1923 broadcasting began in Australia
	1956 transistor invented
	1974 FM radio in Australia
Communications:	1960 first communications satellite

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6. Technological Change in Australia: Report of the Committee of Inquiry, Australian Parliamentary Papers nos. 216-219, 1980, Vol 1 p.74
7. In National Technology Conference Handbook, Department of Science and Technology, Canberra, 1983, P19

These changes have meant that it is technically possible for the arts to be widely available. Never before has it been possible to have access so easily to such a wealth of art. The performances of great actors and musicians can not only be transmitted through space, but also preserved through time.

In this way it has been possible for the arts to develop into a major industry. The development of the arts industry has gone hand in hand with a tendency for art to change from a community activity to a commodity which is produced by experts for consumption by the general public, a change which parallels the death of cottage industries and the rise of the specialist factory during the industrial revolution.

Ron Nagorcka[8] illustrates this process in music by pointing out that before the Industrial Revolution almost everyone could make music and many people built instruments. In the 19th century the large orchestra, a specialised musical 'machine' developed; and in the 20th century

> 'with the invention of things like the radio, that notion of music being produced by one small group of people for the rest of the populace to listen to becomes institutionalised through technological processes'.

3.3. POSSIBLE DEVELOPMENTS

The Myer Report on Technological Change concluded that

> 'new technology in the entertainment industry ... is unlikely to have a significant effect on numbers in employment but work functions and skills are likely to change.'[9]

The precise impact of technological development on the arts will be discussed in detail in Sections 4 & 5. However there are some likely general effects which can be mentioned briefly here.

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8. Australian composer speaking on an ABC radio program on the arts and technology.

9. Op. cit vol. II p. 434 (This contradicts the same Report's statement quoted above).

As far as consumers are concerned, the most recent developments in technology are likely to give them (or at least the wealthier consumers) a much greater range of products to choose from. Cable television can provide a choice of up to, say, 50 channels; videotaping can allow easy access to TV programs screened at any hour; the proliferation of FM and public radio stations cater for the needs of smaller and smaller portions of the market. Interactive media will increase the consumer's independence, for example, with interactive videodisc frames may be selected and rearranged as desired.

As the means of reproducing and disseminating art works become more diverse and more effective, the regulation of the arts industry in matters such as copyright, moral rights, performers' protection and Australian content will become more complex and more difficult. In the arts as in other spheres, legislation tends to lag behind technological developments. The Committee believes that in order to keep pace with these developments the existing regulatory systems will need to be reviewed.

One of the most obvious effects of the growth of technology has been the increased transmission of the arts across national boundaries. This has reached such proportions that some countries feel that they are threatened by cultural imperialism.

The Committee considers that any assessment of the future economic impact of technology upon the arts can only be speculative. Firstly, it appears likely that technology will influence the availability of the arts. Art employing expensive forms of technology could remain the preserve of the wealthy few. On the other hand, low-priced technology may make some forms of art more widely accessible. Secondly, the demand for some forms of art may decline, leading to a loss of employment opportunities for artists; for example, when live performances are replaced by recorded performances.

4. IMPLICATIONS FOR THE ARTS INDUSTRY

> 'The amazing growth of our techniques, the adaptability and precision they have attained, the ideas and habits they are creating, make it a certainty that profound changes are impending in the ancient craft of the Beautiful.... We must expect great innovations to transform the entire technique of the arts, thereby affecting artistic invention itself and perhaps even bringing about an amazing change in our very notion of art".
>
> -Paul Valery, PIECES SUR L'ART
> "La Conquête de l'ubiquité"

In this section, technology is discussed under the five headings adoped by the Committee in Section 1.3.1 above. It must be stressed, however, that these categories have been adopted for ease of discussion; in reality there are of course many overlaps between them.

4.1 NEW MEANS OF ARTISTIC EXPRESSION

The Committee believes that there are two principal ways in which technology offers new means of artistic expression. Firstly, technologies enable the physical production of new objects, sounds and images. Examples of this include new materials, electronic musical instruments, holography (the production of three dimensional imagery using laser beams) and the production of special visual effects using computers linked with a video screen.

Secondly, technology may facilitate the creative process. Examples include computer aided design and manufacture (in which a sculptor could use the computerised equipment to produce diagrams, maquettes and even the final sculpture) and the use of computers in the composition of music and poetry. They may also be useful as an aid to choreography; the choreographer could experiment with figures on a video screen as an adjunct to working with live dancers. Writers are beginning to use word processors.

This second group of technologies are in effect labour-saving devices which could theoretically enable an artist to produce more work in his or her lifetime, although of course this may not necessarily happen in practice. They may also have the effect of reducing employment opportunities for artists.

Some of the technologies described above are potentially as essential a part of art as oil paint, pianos and stone have been to painters, musicians and sculptors in the past. Artists of the future have a right to learn how to use these resources, and to have access to them.

4.1.1 Access to Technology:

The Committee looked at ways of meeting artists' needs and concluded that one way of achieving this could be by establishing a national Arts and Technology Access Centre, perhaps in collaboration with an existing educational institution. This model has a precedent in the Massachusetts Institute of Technology (see Appendix II)

Another possible model could be the Art and Technology Laboratory, Manchester, U.K. (see Appendix II) which is jointly funded by the Gulbenkian Foundation, the Arts Council of Great Britain and North West Arts.

In June 1976, the Government decided that there was to be no Commonwealth funding of "capital arts projects". The Committee was unable to assess whether this meant that the Australia Council is debarred from funding major technological resources, and therefore recommends (R9) that the Australia Council seek to clarify with Government the implications of the June 1976 decision. Clarification is urgently needed because some artists undeniably need access to equipment if they are to realise their conceptions fully.

There are of course a number of possible approaches to the problem of providing artists with equipment. Expensive items could be available at an Art and Technology Access Centre, and some could be used by artists in residence in industrial or scientific organisations. The Australia Council's Boards could fund artists to hire or buy smaller items such as word processors or computers.

On the other hand, the Individual Artists' Inquiry found that "purchase of materials or equipment" was a low priority with most artists (see Table III, p.41 below).

The Committee believes that there is a need for the new Art & Technology Committee to work with the Australia Council's Boards to rationalise policy on the funding of equipment.

The residencies of artists at the CSIRO were initiated by Policy and Planning at the instigation of the Committee in order to enable artists and scientists to work together and to give artists access to equipment and expertise. The Committee believes that the projects are a useful way of encouraging collaboration between artists and scientists. Moya Henderson, one of the first artists in residence, says of her experience

"The opportunities for research into the Alemba at the National Measurement Laboratories of the CSIRO are almost limitless. My time there is the happiest and most rewarding work experience I have ever had".

In 1983 the Victorian Ministry for the Arts carried out a pilot study with a view to encouraging creative collaboration between artists and industrial/research organisations.

Having compiled a useful list of artists working in technology, the Ministry concluded that the most effective approach to the linking of artists with technological resources is via an "Artists in Industry" scheme, with government providing a salary to be paid through the host organisation to the artists. Government funding appears necessary because although the response from high technology industries has been positive they are not in a position to see the benefit from financial investment in such a project. The Ministry is looking at ways of financing the project (eg through the Commonwealth Community Employment Program) and is confident through the co-operation of the Industrial Design Council, the Victorian Ministry of Industry, Commerce and Technology and the contacts developed during the pilot development stage, of finding suitable host organisations for the scheme.

4.2 EFFECTS ON THE ARTS WORKFORCE

The Committee was unable to assess the likely effects of technology upon the arts workforce. It believes, however, that there is cause for concern, since many forms of technology have the potential to reduce employment opportunities in the arts or to change the nature of the work involved.

For example, word processing and computerised box office and accounting systems could affect the work of arts administrators. Backstage staff could be reduced as a result of computerised lighting, scene-shifting and sound effects. Recorded music is often used instead of live performances and the availability of film, video and television may reduce the demand for live theatre. Some aspects of technology may also adversely affect artists' health.

This issue poses problems for the Australia Council, which is in a dilemma. On the one hand, the Australia Council's Act requires it to promote access to the arts, an aim which can be partially fulfilled by technology such as recorded performances. Yet this same technology may, by depriving artists of opportunities for live performance, run counter to another of the Act's requirements; that the Australia Council provide opportunities for persons to practice the arts.

The Committee believes that the Australia Council should monitor working conditions, provide for the retraining of artists who are adversely affected, and ensure that artists are adequately rewarded for the recorded use of their works. However, if technological developments are having an adverse effect on employment opportunities, it is likely that this is part of an economic process that the Australia Council is powerless to change.

4.3 LEGAL ISSUES

The widespread availability of sound and video recording equipment and computer storage and retrieval poses a threat to artists' rights by facilitating the recording, copying and dissemination of their work. Not only is it technically easier to breach copyright, but such breaches are harder to police. Performances, once ephemeral, can now be fixed on tape and pirated without payment of royalties. As media outlets increase, it may also become harder to use existing regulatory mechanisms (such as Australian content quotas) to foster Australian culture.

At the same time, the growth of technology has the potential to expand the ways in which artists can receive remuneration as their works are disseminated more widely.

The Australia Council already funds the Australian Copyright Council as a means of assisting copyright holders. In addition, at the instigation of the Art & Technology Advisory Committee, Council has made a submission to the Attorney-General on Audio-Visual Copyright asking that all creators should be remunerated for audiovisual uses of their work, with funds raised via a royalty on blank tapes and recording equipment.

Council has also made a submission to the Copyright Law Review Committee asking that copyright protection be extended to performers.

The full implications of the new technologies are of course difficult to forecast. However, the Committee recognises that the law will need to be continually revised if it is to keep pace with the rate of technological change. The advent of technologies such as satellite transmission and information storage and retrieval will inevitably have an enormous impact on the law in the very near future. The Australia Council should continue to monitor these developments and, in particular, the effect of any changes on the contractual position of artists. Their bargaining power might be weakened considerably if the technological imperative is allowed to undermine the traditional relationship between the artists and their public.

4.4 USE BY ARTS ORGANISATIONS

4.4.1 Computer Information Systems

There are many ways in which technology can be used to streamline arts-related activities, particularly in the areas of administration, typesetting, back-stage work and the transmission and sorting of information. It is likely that the use of technology to achieve greater efficiency will affect the working conditions and employment opportunities of artists (as mentioned above p. 23)

Nevertheless, the Australia Council is concerned to help arts organisations to run more efficiently, as to do so may enable more value to be obtained from the subsidy dollar.

> 'not every arts agency needs a computer to handle its information requirements, and not every problem can be solved by automation ... manual systems are better than computers, if they are effective[1]'

However, the Committee believes that some arts organisations can benefit from using computers and that the Australia Council should offer these organisations assistance so that they can select the computer system that is best suited to their needs.

Computers may be used by arts organisations to perform a wide variety of functions: mailing lists, payrolls, subscription renewal, printing of tickets, indexing (library or gallery holdings) and information dissemination (eg performance/exhibition schedules and venues). All of these functions have the potential, if compatible systems are used by all organisations to facilitate relationships between organisations and to provide nationwide resources. The details of this are provided in Appendix VII. However, a few examples will demonstrate the point.

An arts organisation will find it much easier to prepare an application for funds, or to provide a financial report to a funding organisation if the two organisations use compatible budgeting/ accounting systems. A curator trying to compile an exhibition of Fred Williams' works, or a researcher compiling a reading list on Christina Stead would be greatly helped if all art galleries and arts libraries used a compatible indexing system.

The Committee believes that of all the organisational 'efficiency' technologies, the Australia Council should give priority to work in the field of computerised information systems, because it is here that the Council can be most effective. Computerised information systems are relevant to all the arts whereas other forms of automation (eg computerised lighting boards, scene shifting, sound-effects machinery and typesetting) are more specialised. It is essential that Council should assume a co-ordinating role to ensure the compatibility of systems.

Co-ordinated information systems would enable arts organisations to exchange and disseminate information, the compilation of statistics would be facilitated, and the information in the Directory of Performing Arts Venues now being compiled by the Australia Council could be made widely accessible by electronic data base.

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1. Cok, Mary Van Someren, All In Order: Information Systems for the Arts 1981, p.41

In the U.S.A., for example, a National Information Systems Project[2] has been undertaken. The Committee suggests that the Australia Council examine the work done in this field in the United States with a view to co-ordinating a similar project in Australia. The goals of the project are given in Appendix VIII.

The Committee is aware that some computer corporations have helped arts organisations to acquire computers. For example, the Wang Corporation has provided assistance to a small number of arts organisations in Australia - an initiative which the Committee warmly commends. The Apple Corporation in the USA runs a Computer Community Affairs Grants Program to which arts organisations on a budget of less than $US500,000 per annum may apply for free computer systems, software and training.

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2. The project is described in full in All In Order: Information Systems for the Arts by Mary van Someren Cok (1981) published by the National Assembly of State Arts Agencies, Washington.)

4.4.2 Videotex and Teletext

The Committee is aware of recent developments in videotex and teletext. Videotex enables the user to gain access via a telephone line to data stored in a central data bank. The informaton is requested using a keypad, and appears on the user's television screen or personal computer.

Teletext information is also requested via a keyboard, and appears on the user's television screen. However, instead of being transmitted by telephone line, it is broadcast. Teletext can give access to far less information than videotex, and so is best suited to often-requested information that needs regular updating; such as news headlines and sports results. Videotex can provide a much wider range of information and also interactive services like teleshopping.

The Committee is aware that teletext is now available in Australia and that videotex is planned for late 1984. There is a need to investigate how these media could be used to provide arts information. It seems likely, however, that videotex may offer more potential because of its greater capacity.

5. DEVELOPMENTS IN COMMUNICATIONS TECHNOLOGY

5.1 INTRODUCTION

Developments in communications technology have had a vast impact on the arts and on society in this century. The range of communications technology is in itself vast, including

Existing television and radio systems
Cable television
Satellite television and radio
Subscription television
Videotape recording
Video disc recording
Film
Data services such as teletext and videotex

Yet the Australia Council is only marginally involved in this field. The Council thus differs substantially from the Canada Council, which in 1982/83 spent over 3 million dollars on film, video, audio and performance art; and the National Endowment for the Arts (USA) which spent over $US10 million on its media arts program in fiscal year 1982.
The NEA's media program is important enough to examine in some detail. It includes:

- support for film and video productions that emphasise the use of these media as art-forms
- conferences and information dissemination
- research into new and existing media
  eg computer interactive videodiscs, colour holography
- distribution (eg. arranging to exhibit arts programming on cable television)
- access to equipment for film & video-makers
- exhibition of experimental film and video art
- developing programs on the arts for national broadcast on television and radio eg

  Live from the Met
  Live from the Lincoln Centre
  The Giulini Concerts
  American Playhouse

- short film showcase (distributing selected short films by independent film-makers to commercial cinemas throughout the USA)

- assistance to community radio

- media arts centres including video library services.

The Committee believes that some aspects of the NEA's media arts program could be adopted by the Australia Council. These will be referred to in the following sections.

5.2 BROADCAST TELEVISION

Though hardly now at the forefront of modern technology, the existing television system has an enormous and underutilised potential for making the arts more widely accessible. At present, although concerts and ballet receive fair coverage on the ABC, the crafts, Aboriginal arts, literature, theatre, opera, contemporary music, community arts and visual arts are relatively neglected. Arts programming on commercial stations is predominantly restricted to contemporary music from overseas. The independent production of arts documentaries is hampered by the fact that:

- there are no funds for arts documentaries except those created by the Film Tax Incentive Scheme. The Australian Film Commission has funded a number of arts-based projects, but only indirectly, as part of its program of film industry support.

- television stations generally pay low prices for arts documentaries and there is therefore little incentive for private investors to sponsor such programs.

- some attempts by the Australia Council to persuade commercial networks to buy arts-based programs have failed.

It is therefore not surprising that although Film Australia and the ABC produce arts documentaries regularly, very few independent film producers do so. It is important to encourage non-institutional, independent productions in order to reflect diverse views of culture.

The Australia Council's major recent venture into television has been the allocation of funds ($46,000) to the Australian Children's Television Foundation to commission a series of arts-based children's programs for screening on commercial television.

The Committee believes that there is a need for research on the extent and nature of audiences for arts television programs. This could be carried out most efficiently if it were incorporated into the Australian Broadcasting Tribunal's existing audience survey program. Guided by this research, the Council could initiate, develop and co-fund or fund innovative film and video arts projects for television. In addition, the Australian Broadcasting Corporation could be encouraged to consider setting up an Arts Advisory Committee, modelled on its Science Advisory Committee.

Commercial stations are governed by regulations demanding that they meet a quota for Australian content and that they provide an adequate and comprehensive service. The stations claim that they now meet or exceed their quota, and urge deregulation. The Committee endorses the requirements for Australian content as they provide employment for Australian artists and promote Australian culture. It also believes that an 'adequate and comprehensive service' must include broad coverage of the arts in order to make the arts more widely accessible and especially to diversify programming, thereby better meeting the diverse requirements of the viewing public.

In 1983 the Australian Broadcasting Tribunal circulated a discussion paper on Australian Content on Commercial Television. In its reply to the Australian Broadcasting Tribunal's discussion paper, the Australia Council recommended

- the maintenance and enforcement of existing local program quotas;

- that a special quality-related points system be introduced to ensure the production of higher quality programs;

- that programs be produced which depict the diversity of Australian art and artists and the nation's general cultural and social fabric, and allow for the expression of different ethnic, class, gender and age group interests; and

- that a quota be set for local cultural programs devoted to all art forms.

The Australia Council's reply warned that the abolition of quotas regulated by the Australian Broadcasting Tribunal and the introduction of industry "self-regulation" could cause a reduction in the production and broadcasting of local television programs, particularly drama series, teleplays, documentaries and musical programs.

The reply reiterated the Australia Council's support for the recommendations on children's programming that it put forward to the Australian Broadcasting Tribunal in 1982, and offered Council's services in helping to facilitate contact between program makers and arts organisations.

A survey (conducted by Richard J. Rowe and Associates) of arts organisations' use of television concluded that a number of organisations found themselves unable to negotiate competently with broadcasters and frequently lacked experience of film and television production.[1] Nevertheless most respondents recognised the need to develop experience in film and television projects.

The Committee considers that the Australia Council has a role to play in helping organisations to acquire the expertise necessary to enable them to make greater use of television and other electronic media. In particular, it could provide arts organisations with funds to engage expert assistance with marketing their product to the electronic media. It could also engage a consultant to market existing arts programs and assess commercial television's attitudes to the arts.

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1. Richard J Rowe & Associates, An Evaluation of the Use of Television by Arts Organisations, 1983 p.32

5.3 RADIO

The Committee believes that radio is an excellent and relatively cheap means of disseminating the arts widely.

Radio is especially suited to presenting arts information, reviews, plays, literature (as 'talking books') and music. The development of simulcasting (simultaneous broadcasting on FM stereo radio & television) presents new possibilities for high-quality dissemination of arts performances throughout the nation.

As with television, the Committee believes that the Australia Council should explore ways of using radio to disseminate the arts.

The Committee also considers that there is a need for more widely available formal short courses specifically on radio production.

5.4 CABLE TELEVISION

The present Government has decided not to introduce cable television in the foreseeable future. The Australia Council has already advised the Australian Broadcasting Tribunal of its views on how a cable network should be established, if Government were to decide to introduce it. In that event, the Australia Council should develop a strategy for ensuring that the arts make full use of the opportunities presented by cable's multiple channels.

5.5 THE DOMESTIC SATELLITE FOR TELEVISION AND RADIO

In 1985 the Australian communications satellite will be launched. In addition to its telecommunication functions, it will have a limited capacity for broadcasting which will enable the ABC to commence its Homestead and Community Broadcast Satellite Service (HACBSS). This will enable a number[2] of outback residents (now without radio or television) to receive similar ABC programs to those available in the cities.

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2. This number has been estimated at between 175,000 (Telecom) and 400,000 (Aussat).

The satellite is also likely to be used by public broadcasters for distributing educational and regional programs, and by commercial broadcasters for networking, with 'a resultant homogenisation of the Australian media diet'.[3]

Judi Stack suggests that the satellite could also enable 'greater aggregation of audiences for new services such as minority interest arts programming on public television'.[4] (ie instead of being able to broadcast a Noh drama only to Sydney Japanophiles, the audience can be enlarged by including enthusiasts from all over the country. This aspect of networking is especially significant, however, for commercial stations which need large audiences to attract advertising revenue). There is now the opportunity for the Australia Council and the Australian Film Commission to act as catalysts in the provision of arts programs via satellite.

The Committee notes that the relatively high cost of satellite receiving equipment may pose a problem. In order to receive direct broadcast satellite television and radio, each household will need to purchase its own earth station (receiver dish). The costs have been estimated as follows:

Capability of Earth Station	Cost Range $
Receive 1 TV Channel	1040 - 2360
Receive 1 TV Channel & 2 radio signals	1300 - 2620
Receive 2 TV Channels & 4 radio signals	2080 - 3410

(Source: Department of Communications Executive Minute 82/13)

3. Stack, Judi 'The Arts & New Communications Technologies' in Future Challenge, (1982) p.43-45
4. Ibid

The advent of satellite television in 1985 will bring urban white programs to outback Aboriginals and it is likely that if the media available to Aboriginals are completely flooded with non-Aboriginal product, existing Aboriginal culture could be threatened.

The solution may be to facilitate the production of programs by Aboriginals. The Central Australian Aboriginal Media Association (CAAMA) is conducting a feasibility study for a TV production training unit, and the Committee understands that the Departments of Communication and Aboriginal Affairs are investigating the possibility of low-cost community-controlled broadcasting stations in remote areas to counteract the effect of the domestic satellite. Finally, AUSSAT (the body controlling the satellite) has commissioned a study of Aboriginal use of the satellite (due to be completed in June 1984). The Aboriginal Arts Board is monitoring these developments with a view to the possibility of jointly funding pilot television programs with CAAMA.

5.6 RADIATED SUBSCRIPTION TELEVISION

The Government has invited proposals for a Radiated Subscription Television service (RSTV), but has not yet made a decision on whether or not to adopt RSTV.

The implications of RSTV for the arts depend on the type of service offered. A fully commercial RSTV service would need to make as much money as possible, and could be expected (unless regulations demanded otherwise) to show programs which would yield the highest profit by attracting subscribers and keeping them interested enough to pay the estimated $30 a month subscription.

A government-funded RSTV service would be under less pressure to earn income. The ABC, for example, proposes to offer free programs for minority groups outside prime time, and to charge for popular programs screened in prime time.

As Government is now considering the introduction of RSTV, the Australia Council should consider the implications of this medium of the arts, and advise Government accordingly.

5.7 VIDEOCASSETTES

> 'Videocassette recorders have reached over 20 per cent household penetration; after the UK ... Australia has the highest VCR penetration in the world' (National Times, 7-13 Oct 1983 p.12)

Note: the comments in this section may also apply to videodiscs when they become more widely available.

The question of video as an artform has been dealt with on page 21 above. Here the Committee is concerned with the use of video as a means of transmitting artworks which have not necessarily been created exclusively for video - eg a videocassette of an opera or ballet.

There is too little information available to determine the likely impact of the video boom on the arts. However the following points are of interest:

- 10,000 videocassette recorders are sold every week
- video has created a huge demand for 'product' which current film production cannot satisfy
- attempts to sell 'art' videos at around $200 each have not been successful[5]
- videos have been especially useful in remote areas without television services
- they are widely used in Aboriginal communities[6]
- 'video libraries were seen to offer only a limited variety of material; 50 per cent of the material is soft porn'[7]

The Australia Council has already distributed arts programs on videocassette at subsidised prices to educational institutions and is now investigating the possibility of releasing arts documentaries through home videocassette market outlets. The Australia Council is well-placed to provide production and development assistance to arts program makers. In the past, the Australia Council has been involved with many successful arts documentaries, yet no central fund for this purpose presently exists.

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5. National Times, Sept 30-Oct 6 1983
6. Australian Library News, July-Aug'83 p.1
7. Australian Broadcasting Tribunal, Extended TV Services in Perspective, p.19

Some Australian arts organisations are already releasing videocassettes of their work. The Committee in principle supports the use of videocassettes as a means of making the arts more accessible and acknowledges that video is a highly efficient way of reaching remote areas. Nevertheless it believes that more research is needed on the costs, benefits, and ways of distributing video arts programs.

> '... we should not lose sight of the principles which art represents, particularly as they relate to communication and meaning ... in the midst of high technology these objectives can be achieved with seemingly primitive methods, and ... in this respect, technology as a tool is more the point than technology as an end in itself' - Ross Wolfe, Director, Visual Arts Board.

The Australia Council is a statutory authority whose role is to foster the artistic life of the nation. One of its objectives is to provide advice to government at all levels on policies and programs for the arts.

Policy and Planning asked the Committee to undertake the writing of this report because of a belief that the Australia Council should take the initiative in responding to changes in the technological environment.

In view of this, and of the fact that in the Committee's opinion, technology affects the cultural lives of every Australian, the Committee considered that it was necessary to investigate the Australia Council's response to technology to date. It therefore asked Policy and Planning to undertake a survey of all the directors of the Australia Council's Boards. The Committee decided to do this because the Australia Council delegates wide powers to its Boards, enabling each to make grants and devise policy in respect of its own art form.

In February 1984, Board Directors responded to a brief questionnaire about their attitudes to, and Board funding of, technology. The results are summarised in Table II, p. 38.

One of the most notable findings of the survey was how few projects involving much technology were funded and how many Boards had no policies on the relationship of art to technology.

In 1982/83[1] the seven Boards spent approximately $290,000 on 39 projects in which technology was a major component (ie was over 50 per cent of the project budget). This is possibly an inflated figure as the Visual Arts Board (whose list of projects far outnumber the other Boards') listed not only projects with technology as a major component but all projects involving technology at all.

TABLE II BOARD DIRECTORS' RESPONSES TO QUESTIONNAIRE ON TECHNOLOGY

	ABOR-IGINAL ARTS	COMMUNITY ARTS	CRAFTS	LITERATURE	MUSIC	THEATRE	VISUAL ARTS
1) Policies* affecting technology	No	Do not fund equipment costs. Otherwise no policy on technology	Funds film and video, and technical research. Unstated willingness to help	No direct policy	Funds recording + commissions in Electronic music	Will not fund purchase of equipment. Does fund archival films	No policy - but will discuss in March, 1984
2(a) Number* of projects funded with technology as major per cent 1982/83	—	1	4	3	17	—	14 approximately *
2(b) Total value of such projects	—	$4,460	$35,988	$79,000	$76,749	—	$94,064 *
2(c) Type of technological project	—	Video/documentation	Film, video, radio, television, computer information service study	Film and television	Recording, tapes, soundtrack, satellite, performance, computers	—	Equipment, documentation, video, exhibitions, film, travel by artists
3) If Board did not fund any projects with technology as a major component, what was the reason?	No applications	Board policy precluded funding. Few applications. Project content a low priority	NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	No applications negligible activity in, or awareness of technology in theatre	NOT APPLICABLE
4) Do you think Board should give more assistance for technology?	No reply	Board willing to consider projects with technology component if the aims and content fall within its criteria	Yes. Interest in supporting pilot projects to use advanced technology to develop innovative craft design ideas	Yes if projects suitable. Video seems to offer potential to increase access to writing and writers	If need for more electronic facilities could be demonstrated. Demand is low but this may reflect lack of awareness	Yes. Issue needs to be debated, expert advice sought. Theatre arts by and large not aware that we are in a technological age	Board already open to funding technological media. Could look at computer-based resources in contemporary art spaces network, and a television program on visual arts
5) Views on what Council's policy on technology should be?	No reply	No	"The question of how much the Australia Council should lead/initiate and how much it should respond is relevant. Given resources, how much is this area a priority? Perhaps we can play a role in assisting in the dissemination of information on what new technologies are available to assist the arts/artists. Boards should be responsive to possibly risky new technology ventures by individuals."	Council should be open to new developments and willing to utilise them effectively	"Stay current, make opportunities more broadly available, fund to some extend the cutting edge."	Positive: - bring about attitudinal change through information, facts and figures, seminars, etc. - staff "education" in the area	"...given the role of technology in society it is obvious that we have a responsibility to address this issue...In this context we should not lose sight of the principles which art represents particularly as they relate to communication and meaning...In the midst of high technology these objectives can be achieved with seemingly primitive methods...in this respect, technology as a tool is more the point than technology as an end in itself."

At the time of the survey (February 1984) 5 Directors reported either that their Board had no policy on technology and/or that they had not discussed the issue. Two Boards (Community Arts and Theatre) would not fund equipment, although both were prepared to help with certain kinds of film or video projects. Three Directors reported few or no applications for technological projects (Aboriginal Arts, Community Arts and Theatre). Four Directors made suggestions about the Council's policy on technology and their comments are quoted at length in Table II. All felt that Council needed to address the issue, and suggestions included 'being open to new developments' and informing clients and staff about technology. Questions were also raised: is technology a priority, given the Australia Council's resources? Should the Australia Council take the lead, or should it respond?

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1. Music Board's figures are for 1983/84

The Committee considered why, with rare exceptions, so few grants are given to technological projects. The reasons for this are no doubt many and complex; they could include factors such as:

(a) Few Board members and staff have a technological orientation: by and large they are chosen for their achievements in and knowledge of the mainstream arts, which puts them at a disadvantage when it comes to specialist technical matters. It is also difficult to keep abreast of developments which occur so rapidly in the field of modern technology.

(b) The problems involved in funding equipment: Following the Government decision of 1976, (see p. 22) it is not clear whether the Australia Council is able to fund equipment. It is therefore not surprising that the Australia Council has not developed a consistent policy on equipment. Applicants may perceive that equipment is not a Board priority, or it may simply be that few applicants are interested in grants for equipment. (In this connection it is worth noting the findings of the Individual Artists' Inquiry on artists' opinions of the most important purposes of direct financial support. Table III (p. 41) shows that 'purchase of materials or equipment' was ranked 7th in order (chosen by 6 per cent of artists) and 'experimentation or innovation' (a category which could embrace new technology) ranked 8th (chosen by 5 per cent). It is also significant that craftspeople, visual artists and musicians attached more importance than other artists to the purchase of equipment.

Moreover, the Australia Council is continually beset by the problem of how to stretch its funds to keep existing activities going; and much technology is expensive. There is the additional dilemma of whether artists should purchase equipment rather than hiring or borrowing it.

(c) Board structure is orientated towards conventional art forms: This poses a problem when technology engenders new art forms. For example, should a piece of video art using computer graphics, music, choreography and a spoken script be funded by a Visual Arts, Film, Music or Theatre Board? What about 'events' such as musical or dramatic performances where artists in different parts of the world are connected by satellite? Or artists' electronic international communication networks (like Artbox)?

TABLE III

Artists' Opinions of Most Important Purposes of Direct Financial Support

(per cent of artists)

	Purpose(a)										
	Local study	O'seas study	O'seas work	Purch. materials	Experim-entation	Income maint.	Research	Comm. part.	Other	Total	n (b)
Writers	5	5	5	-	3	70	6	2	6	100	183
Craftspeople	15	11	7	11	7	35	-	4	7	100	176
Visual artists	8	9	16	10	4	45	-	2	6	100	199
Directors/ designers	6	11	26	4	14	32	-	7	-	100	37
Actors	21	8	25	1	13	15	-	9	9	100	116
Dancers/ choreographers	17	23	19	4	4	16	2	9	6	100	44
Musicians	22	17	11	8	3	21	-	11	7	100	144
Singers	16	34	24	-	8	18	-	-	3	100	25
Composers	11	21	5	7	5	43	-	5	5	100	27
Community artists	-	4	-	4	-	60	-	24	8	100	25
All artists	16	13	14	6	5	32	1	7	7	100	976

Notes (a) The full purpose categories are, respectively:

- local learning or study
- overseas training or study
- overseas work experience
- purchase of materials or equipment
- experimentation or innovation
- income maintenance or 'buying time' to allow individuals to concentrate on arts work
- research
- helping artists to encourage active community participation in arts activities

(b) Unweighted number of respondents.

Source: The Artist in Australia Today: Report of the Committee for the Individual Artists Inquiry Australia Council, 1983 Appendix I, p.56.

In 1976 the Government removed the Australia Council's film, radio and television functions, leaving it in a ludicrous position as an arts funding body which is debarred from what is probably the major development affecting the arts in this century: the electronic media. Since that time, the Australia Council has been only marginally involved in this field.

The Committee is concerned that the Australia Council has so little involvement in an area which not only affects the cultural lives of almost every Australian, but which is also on the verge of rapid transformation, with videocassettes and FM and public radio having recently developed, and videodisc, cable, subscription and domestic satellite television all on the horizon.

The Committee therefore urges the Australia Council to play a leading role in disseminating the arts via the electronic media before it is too late to take advantage of the rapid developments in the field. It needs a substantial budget, expert advice and specialist staff in order to use the electronic media to carry out the Government's policies of making the arts more widely accessible.

Conclusion : The Australia Council's need for an arts and technology committee:

In Sections 4 and 5 of this Report, the Committee outlines the vast scope of the work that the Australia Council needs to undertake if it is to come to grips with the issues raised by technological development. In this Section it shows that at present Council's resources are inadequate to meet the challenges of technology.

The Committee is concerned that the Australia Council is in the position of being the formal advisory body on the arts, while lacking sufficient funds to be able to respond to major developments in technology.

The Committee concludes that the Australia Council needs a formal structure to refine, co-ordinate and monitor the implementation of policy on art and technology, and proposes that this could best be achieved by an Art and Technology Committee, composed of people with expertise in the following areas:

- technology as a source of new means of artistic expression
- the effect of technology on the arts workforce
- legal issues associated with technology
- computer expertise
- arts and the electronic media.

The Committee members should include artists, (drawn from as wide a range of artforms as possible) and people with other relevant experience. Because of the large volume of research needed, some members of the Committee should be chosen because of their background in research on the social effects of technology.

There should be a total of eight members, one of whom should be the Director of Policy & Planning ex officio. The Committee estimates that this Committee will require, for its first year of operation, a budget of $640,000 and the services of one full-time and one part-time staff member.

APPENDIX I

POSSIBLE RESOURCES AVAILABLE FOR TECHNOLOGICAL ARTS PROJECTS

This appendix is not intended as a comprehensive guide to resources in the field. It is merely a collection of suggestions which further experience and research will modify.

The following categories of resources are suggested.:

- Educational/Research institutions.
- Art institutions.
- Museums.
- Commonwealth Government Funding.
- State Government Technology Agencies.
- Private organisations.

1. EDUCATIONAL/RESEARCH INSTITUTIONS

Possible opportunites for collaboration may arise within:

- Institutes of Technology.
- University Departments (e.g. the Department of Physics at the Australian National University, and the Royal Military College, Duntroon, do work in holography).
- Art Colleges.
- The Centre for Technological and Social Change (at the University of Wollongong).
- The CSIRO.

2. ART INSTITUTIONS

These include:

- progressive visual arts centres (e.g. Artspace in Sydney, Experimental Art Foundation in Adelaide, and the Institute of Modern Art in Brisbane).
- State arts finding bodies.

3. MUSEUMS

Some Museums may be appropriate places to display technological works of art or to collaborate in their creation. The Museum of Applied Arts and Sciences in Sydney is an example of such a museum.

4. COMMONWEALTH GOVERNMENT FUNDING

There are a number of Commonwealth bodies which could be investigated, e.g.

4.1 The Australian Industrial Research and Development Incentives Scheme (AIRDIS)

This pays up to half the cost of selected research and development projects carried out by or on behalf of Australian manufacturing, mining or construction firms. Its 1983-84 budget is $71 million.

4.2 Australian Industry Development Corporation

This could be of limited usefulness to the arts as it lends to commercial ventures at commercial rates.

4.3 Australian Research Grant Scheme

It appears that many arts research projects are likely to be eligible under the guidelines of this scheme, under the categories:

- English (including Australian and American Literature.
- Drama.
- Music and Fine Arts.
- Architecture.

However, it is not clear where craft, dance, film, video and TV projects for example, might fit in to the scheme. Moreover most of the grants are awarded to academics attached to universities.

4.4 Commonwealth Development Bank

Provides loans for the establishment and development of businesses (including "entertainment" and "leisure") which are unable to raise enough money from their own banks. Up to $500,000 may be provided (at approximately commercial rates) for projects such as

- establishing a new business.
- expanding an existing business.
- purchase of plant, machinery, fixtures or fittings.

The bank also offers hire-purchase facilities. It is noteworthy that of 645 business loans approved in 1982/83, three were to the entertainment industry.

4.5 State Government Technology Agencies

As outlined in Appendix V, all State Governments offer some form of assistance with technology.

For example, in South Australia there is a Department of Technology and in NSW there is an Advanced Technology Centre and an Advanced Technology Fund.

4.6 Private Organisations

(a) Business:
Sponsorship for technological projects could be sought from corporations which could also allow artists access to equipment and/or expertise.

(b) Professional organisations:
such as the Australian Computer Society and the Electronics Institute could be approached.

APPENDIX II

SOME OVERSEAS DEVELOPMENTS

This section will discuss organisational approaches to art and technology in several countries. Technological developments per se are dealt with in Appendix VI; there seems no point in treating them country by country as they quickly become international.

1. CANADA

The Canada Council funds video and has a Visual Arts Officer specialising in video.

The Department of Communications announced in 1983 a fund of $32 million for two years to enable arts organisations to use new technology.

2. HOLLAND

The Stichting Artec Centre acts as a conduit for artists working in industrial technologies and as a source of advice for funding bodies. It is funded by the Netherlands Kunstichting.

3. U.K.

The Arts and Technology Laboratory is a registered charity with the following aims:

> To promote arts and community projects, training schemes and research concerned with the development of technology within the arts.
>
> To involve the community in the use of modern technological resources as a means of self-development.
>
> To provide new creative employment opportunities.
>
> To seek practical financial and material backing for arts and technology projects.
>
> To provide for artists, a secure economic and organisational framework.

It is funded by a variety of sources including the Arts Council of Great Britain, the Regional Arts Associations, and industrial sponsors, and at present supports four major projects. Its Arts and Technology Workshop provides facilities in computer graphics, laser and holographic equipment and micro-electronics. Its running costs are around £50,000 p.a.

The Goldsmiths College also plays a role in technology as it relates to the arts: the first holography workshop in Europe was started there with funds from the Rockefeller and Gulbenkian Foundations.

There is an art video library at the Institute of Contemporary Art in London. There is also a Computer Arts Society.

British commercial theatre now uses the Prestel (videotex) system to fill its venues.

4. U.S.A.

At the Massachusetts Institute of Technology, artists are helping to develop new technologies, and new applications for technology. The M.I.T.'s Visual Arts Program offers technical students the opportunity to relate their disciplines to the theory and practice of art. The Program is intended to "motivate imaginative thinking and inventive procedures in the linking of their disciplines with art."

The M.I.T. has a Council for the Arts concerned with "the contributions that technology can offer the arts, the contributions the arts can offer to communications and media technology, and the education of a new breed of artists/technologists". A new facility for the Arts and Media Technologies is proposed, at a cost of over US$20 million.

There is also a chair of Music and Technology.

Another important resource in the U.S.A. is Experiments in Art and Technology (E.A.T.). It is a non-profit, tax-exempt organisation founded in 1966 by a group of 300 artists and engineers to encourage collaboration. It initiates and carries out projects that expand the role of the artist in contemporary society and enable the individual to come to grips with technological change.

E.A.T. has produced a bibliography and a directory of artists, scientists and engineers. In addition, it has carried out significant international projects, (often in Third World countries), many of which are related to community art, public art and design.

There are a number of other interesting developments in the U.S.A. - for example:

- The National Endowment's Media Arts Program.
- The Art Institute of Chicago's Generative Systems Program.
- Los Angeles County Museum of Art has an Art & Technology program.
- In San Francisco, the Exploratorium houses 500 participatory exhibits and artworks illustrating the physical nature of the world and sensory perception.

APPENDIX III

COMMONWEALTH GOVERNMENT SUPPORT FOR TECHNOLOGICAL DEVELOPMENT

1. The Commonwealth and the States

At the Commonwealth/State Industry and Technology Ministers Meeting, in June 1983, it was agreed that:

- The Commonwealth should take the lead in developing a broad national technology strategy.
- The Commonwealth's predominant role should be the development of the technology infrastructure and broad support mechanisms essential to industrial development.
- The States' predominant role should be the development of tactical programs which match the particular needs and opportunities of their State.

2. Venture Capital

The Commonwealth provides financial assistance through the Australian Industry Development Corporation which lends to commercial ventures at commercial rates.

3. Industrial Research & Development (I R & D)

The Australian Industrial Research and Development Incentives Board (AIRDIB) provides grants for industrial research and development undertaken by, or on behalf of, Australian mining, manufacturing and construction companies. The Industrial Research and Development Incentives Act is being amended.

In addition, the Commonwealth funds basic and applied research in the higher education sector as well as in government organisations such as the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the Defence Science and Technology Organisation (DSTO). Grant schemes also support research and development (R & D) in particular areas such as energy and health. General support of industrial R & D is also available through taxation incentives.

4. Technology Transfer

The Commonwealth is involved in technology transfer through its participation in the Technology Transfer Council, which is supported by industry, and has branches in each State. Special technological transfer mechanisms are associated with the Government research organisations such as CSIRO. Other activities include a Technical Information Unit, which provides US S & T information (NTIS), and the Patent Information Service.

5. The Social Impact of Technology

The social impact of technology is considered by the Technology Change Committee of ASTEC (Australian Science and Technology Council), and the Departments of Employment and Industrial Relations and Science and Technology.

The Commonwealth is also considering other initiatives in this field which could involve the establishment of a Joint House Committee on Science and Technology, an Office of Technology Assessment and/or a Commission for the Future.

6. Recent Developments

The Government has decided to provide tax concessions for investors in licensed venture capital companies, and to provide funding for 'sunrise' industries. There is now a greater emphasis on research and on increasing public awareness of technology.

APPENDIX IV

EXTRACT FROM AUSTRALIAN LABOR PARTY PLATFORM
(underlining added)

Government can and should influence the pattern and rate of industrial development through a co-ordinated process of consultation and negotiation with the trade union movement and the private sector at difference levels in industry.

Labor is particularly concerned to encourage technological innovation, the maximisation of Australian equity and the equitable distribution of benefits of industrial development. Therefore changes which are necessary should not be left to the dictates of market forces because costs will then be borne by a few and benefits not spread to the many.

Planning, emanting from a process of extensive consultation, negotiation and government involvement, will greatly assist in avoiding disruption, promoting worthwhile change and employment oriented investment, and fairly sharing the costs and benefits of change.

INDUSTRIAL STRATEGY

Labor will pursue an industrial development strategy based on economic planning jointly devised by governments, trade unions and management. Key elements of that strategy will be:

1. A prices and incomes policy augmented by more equitable fiscal and monetary policies which aims to distribute fairly the benefits of, and is essential to, an accelerated rate of development in all sectors whilst avoiding the exacerbation of inflationary pressures.

2. Promoting increased activity based on the interrelationship between the manufacturing, mining and rural industries in Australia.

3. Increasing investment in industries in which Australia has a comparative advantage, due to our inventiveness, skills or natural resources endowments.

4. Stimulating a more dynamic business environment, inlcuding promoting competition, by revitalising existing viable secondary and service industries and/or by initiating new ones.

* * *

17. Promote the establishment of industries based on new technologies and the utilisation or development of natural resources, where necessary through the provision of financial incentives or direct government equity participation.

* * *

21. Stimulate the level of industrial research and development activity in Australia through the provision of financial incentives, venture capital and through Australian industry participation and offset arrangements in relation to government procurements. Further, develop arrangements to provide for a higher level of technology transfer, including arrangements which expand Australia's capability to produce new technologies.

* * *

RESEARCH AND DEVELOPMENT

- Require foreign owned corporations in Australia to invest appropriate sums in R & D and to give Australian enterprises access to foreign owned technology.

- Establish a national research, development and innovation division within the Department of Science and Technology to advise the government on:

  a R & D grants to industry;

  b Co-ordination of government supported R & D generally;

  c Ways to improve industry through technological innovation;

  d Directing support to programmes which increase the ability of Australian owned firms to capitalise on technologies which increase employment in new fields, particularly those based on natural resources and requiring a high skill content;

  e Co-ordinating government impact on high technology industry through its roles as customer, supporter of R & D and financier;

f working with existing industries, and through industry based committees, to encourage them to make an adequate contribution to R & D - either within their own enterprise or by contributing to a common fund (with the benefit of tax incentives and priority access to innovations); and

g assisting industries with the development of research discoveries and the preparation of patents where appropriate.

- Extend eligibility for Industrial Research and Development Incentive (IRDI) Grants to all types of computer software.

- Provide for IRDI grants to be tax free.

Source: Department of Science & Technology, 1983

e = existing

p = planned

Type of Assistance	COMM	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
TECHNOLOGY DEVELOPMENT									
. Basic Research Support	e		e						
. IR&D Grants	e	e	e		e	e	e	e	
. Technology Parks		p			e	e			p
. Government Research Organisations	e	e	e						
. Innovation Centres		e	e			e			
. Assistance to Inventors Scheme	e	e	e			e		e	
. Technology Advisory Centres	e	e	p	p					
. Technology Demonstration Centres	e	e							
. Research Associations	e								
TECHNOLOGY TRANSFER									
. Technology Transfer Organisations	e	e		p					
. Technical Information Services	e	e	e	e	e	e	e		
. Subsidies for Technology Consultants		e	e		e	e	e		
INDUSTRIAL DEVELOPMENT									
. Payroll Tax Rebates		e	e	e	e	e	e	e	e
. Expansion or Establishment Grants or Subsidies					e	e	e		
. Re-location and Removal Assistance		e	e	e	e		e		e
. Feasibility Studies		e	e				e	e	e
. Market Research Reports		e	e	e	e	e	e	e	
. Purchasing Preference	e	e	e	e	e	e	e	e	
. Off-sets	e	e	e	p					
. Taxation Concessions	e								
. Advisory Bodies to Government	e	e	e		e	e			
. Industrial Design Council	e	e	e	e	e	e	e		
. Productivity Promotions Council of Australia	e								
FINANCE									
. Loans and Loan Guarantees	e	e	e	e	e	e	e	e	e
. Equity Finance	e		p		p			e	

Type of Assistance	COMM	NSW	VIC	QLD	SA	WA	TAS	NT	ACT
INTERNATIONAL ISSUES									
. Foreign Investment	e								
. Technology Transfer Through Joint Ventures		e	e	e	e	e	e		
. Export Promotion	e	e	e	e	e	e	e	e	
. S&T Agreements	e								
. OECD - CSTP	e								
SOCIAL ASPECTS									
. Studies of Particular Technologies	e	e	e		e				
. Consultative Mechanisms	e	e	e	e	e	e	e	e	
. Education and Awareness Raising	p	e	e						
. Monitoring Effects of Tech Change Overseas	e	e	e						
. Government Advisory Bodies on Tech Change (incl Statutory Authorities)	e	e	e		e	e			
. Training Grants and Other Support	e	e	e						

e = existing; p = planned/proposed

APPENDIX VI

RECENT DEVELOPMENTS IN TECHNOLOGY AS THEY RELATE TO THE ARTS

ARTBOX (now known as ARTEX) is an intercontinental, interactive electronic mailbox system designed to serve the communications needs of artists, art colleges, galleries etc. There are about half a dozen users in Australia.

CABLE TELEVISION conveys its signal via cable instead of via the airwaves. This makes it expensive; only homes which pay to belong to the cable network can receive signals, and it is only economical to lay cable in areas of high population density.

On the credit side, cable can provide a larger number of channels; services in the U.S.A. may offer over 30 channels. These may be tiered, i.e., anyone who subscribes to the cable system may receive the basic services, but certain channels are only available for an additional charge. Sometimes a viewer may pay extra to watch a particular program; this is the pay-per-view system.

Cable can also offer more than mere television programs. Some of the channels can be interactive and can be used for burglar alarms and business transactions, e.g. shopping, banking or information seeking. The cable medium could also be used to transmit HIGH DEFINITION TELEVISION (q.v).

COMPUTERS

Computers have a vast range of applications to the arts.

1. Analysis

   Computers can be used to analyse works, to determine how they are constructed. For example a computer has been used to examine the patterns used by Bach and to generate more "Bach" compositions.

2. Composition

   Computer composers and poets use computers to construct works according to their requirements (eg using certain notes, or certain sequences of words.

3. Computers in administration

   Possible applications are: ticketing, budgeting, records, mailing, payroll.

4. Computer-driven machinery:

   Lighting boards, scene shifting machinery and sound effects can be run by computers. A computer enables the Opera House organ to store performances and replay them (rather like a modern pianola)

5. Computer-generated imagery:

Computors can be used to generate special visual effects for film and television. They can be used as an aid to design. For example, a designer could sketch a flower and, at the touch of a button, enlarge it, shrink it, rotate it, change its colour and repeat it all over the video screen. Thus automation can speed up design processes enormously. The computerised design aid can be connected to a manufacturing tool eg an automatic lathe which will produce an object of the shape that appeared on the screen.

6. Computers as an aid to choreography:

Work is in progress on a system to enable a choreographer to create 3-dimensional human figures on a video screen and move them about. There is a computerised system for editing Laban choreographic scores.

7. Computer musical instruments (CMI's):

The Fairlight CMI can play any combination of synthesised or natural sounds. It records on a floppy disc music played on its keyboard. The keyboard can be tuned in seconds to virtually any scale. A composer can draw waveforms onto the screen and the Fairlight will make the corresponding sound. Alternatively musical notation can be typed in via an alphanumeric keyboard and variations can be made to the score by the computer.

8. Computer Graphics

Can be used to generate artificial images (including 3 Dimensional ones) and to scan and manipulate filmed images. Computer graphics are used widely in producing animated films and special effects for film (as in Tron, where computers were used to generate vistas of texture and light).

HIGH-DEFINITION TELEVISION has 1125 lines instead of the normal 500-600. Its picture is therefore far clearer. However, as this medium is expensive and would take up a lot of space on the electromagnetic spectrum, it would most probably be practicable only if transmitted via fibre-optic cable, rather than broadcast.

HOLOGRAPHY a photographic technique which uses LASERS (q.v.) to create a three-dimensional image. It has the potential to reproduce images of artists or art objects, thereby making them more widely accessible.

FILM: The "Showscan" technique gives a picture that is "so lifelike and 3-Dimensional you feel you are there". It achieves this by using 60 frames per second instead of 24. However there are delays in introducing this technology as cinemas would need new equipment.

LASERS A Laser is a device which generates and amplifies light waves of a pure colour in a narrow and extremely intense beam of light. Lasers may be used to make HOLOGRAMS (q.v.) or to cut materials. They therefore have the potential for use in visual arts or crafts.

PAY TELEVISION Any system of television (via the airwaves, cable, or satellite) that the viewers pay to see. The two common forms are CABLE TELEVISION and RADIATED SUBSCRIPTION TELEVISION. Cable television is transmitted via a cable network, radiated subscription is broadcast and can only be received by viewers whose sets are fitted with a decoder. Within either a cable or a radiated system, there may be variations in charges; some material may be available free, or cheaply; other material (usually very popular programs) at a higher price.

RADIATED SUBSCRIPTION TELEVISION: See PAY TELEVISION

SATELLITE COMMUNICATIONS A communications satellite may be used to relay ordinary television services (c.f. SATELLITE TELEVISION). For example the ABC will use satellite in 1985 to transmit its programs to the outback. However, it can also be used as a telecommunications link for arts events so that artists on different cities or even countries can perform "together".

SATELLITE TELEVISION AND RADIO A satellite is simply an effective way of conveying television (and other signals) over long distances. It is an alternative to existing terrestrial relay stations and cables. The television signal is beamed up to the satellite, where it can be amplified and beamed back down again to a target area. The signal can be received on earth by a giant dish and then retransmitted to a local region by normal means. Or, if it is strong enough, the signal can be picked up directly by small (1 metre) dishes connected to individual television sets. This is the Direct Broadcast method, to be used by the ABC in 1985; homesteads in the outback will be able to receive television via their own dishes.

SLOW SCAN TELEVISION This is a form of "freeze frame" television transmitted via the telephone line. It is a cheaper way of transmitting images than via satellite. However it is very limited; two frames per minute might be transmitted in black and white, fewer in colour. It is an interactive medium in that the viewer can request and receive additional information.

TELETEXT is now available from commercial television stations on television sets equipped with special decoders. "Pages" of information are broadcast and appear on the screen. The user selects a "page" by typing a code number on a special keypad. This service obviously has the potential to provide information about arts activities.

This type of technology is also used to provide subtitles for deaf viewers. Teletext is a medium which is best used for a limited range of often-requested information, e.g. weather, news headlines and sports results. In this it differs from VIDEOTEX (q.v.)

VIDEO DISC: Video discs (now available in the U.S.A.) are records which play back not only sound, but also images, via a television screen.

Thus instead of merely listening to a record, one can watch the artists performing, or a display of COMPUTER GRAPHICS (q.v.) can be created to accompany the music.

VIDEO DISC (INTERACTIVE): Images (eg of a town) are stored on the videodisc. Then the viewer can choose any route through the town and the computer will select the correct visuals from the disc. The images may be accompanies by stereo sound.

This technology is at present used mainly for industrial training. A few "entertainment" videos have been made eg Dirk the Dragon Slayer in which using joystick and firing button, the viewer controls Dirk's actions so that he either dies or succeeds in rescuing a princess.

VIDEOTEX A videotex system uses telephone lines to transmit information as requested. As with TELETEXT, the user requests information by typing a number on a special keypad, and the information is displayed on the user's television set or personal computer screen.

Videotex gives access to a much larger data base than teletext, and can also be used for interactive services such as electronic messaging, teleshopping and games.

Britain already has a videotex system (Prestel) and the Australian Government has approved the establishment of a service by Telecom, which is expected to begin operating at the end of 1984.

Presumably this technology offers considerable possibilities to the arts, eg ticket-buying and access to a wide range of information. In theory, literature and visual arts could be transmitted but these uses seem unlikely to succeed since prolonged close viewing apparently causes eyestrain.

WORD PROCESSING Word processors now cost from $5,000 - $15,000. They can store a typescript on a floppy disc which can then be used on a computerised typesetter.

Word processors and computer typesetting mean that the editing and publishing processes can be streamlined.

APPENDIX VII

COMPUTERISED INFORMATION SYSTEMS

1. How a Computerised Information System works:

The Australia Council's Library uses a micro-computer to index its press clipping collection. (The system will eventually be extended to cover the entire library collection). The Council pays a fee to have its index connected to the national data base, Ausinet. This means that a researcher using a terminal in, say, Perth, will be able to receive, on payment of a fee, a list of all the Australia Council's press clippings on any subject. The researcher could then use that list to locate the required new items in a Perth library collection.

The Australian Council receives a fee for each enquiry about its collection. The library in the Australian National Gallery uses the same indexing system (Artsdoc) as the Australia Council, which means that the researcher can have access to the holdings of both Libraries.

A system of this type is capable of being extended to form a huge information network between arts agencies.

2. Overseas work on computers for the arts:

There has been considerable work done overseas which could form the background to developments in Australia:

(a) The Gulbenkian Foundation has published Iwan William's Computers and Management: a Paper for Discussion (1982) and conducted conferences on computers for arts organisations. Iwan Williams has written a report on the outcome of these conferences.

(b) The Arts Council of Great Britain conducted a survey of arts organisations' use of computers and has set up a consultation service to assist its clients.

(c) Useful work done in the U.S.A. includes a survey of computer use by 259 performing arts organisations (Nancy Kassak and Lou Moore), Computers and the Performing Arts, Theatre Communications Group, New York. There is also the Buyer's Guide to Microcomputers for Non-Profit Arts Organisations produced by Business Volunteers for the Arts, Seattle, 1983

(d) The National Information Systems Project (U.S.A.) is described in detail in Appendix VIII of this report.

3. Developments in Australia

A.R.T.S. Limited is running one or more seminars on computers for arts organisations, starting in February 1984. A.R.T.S. will assess the arts organisations' needs and publish a book on computers for arts organisations.

4. Two Computer Debates

(a) The software debate:

John Urice claims that

"The array of user-friendly software available which can assist in the operation of a local arts agency is almost beyond belief".

(in "Computer Software and the Arts", the New Evolution" in Connections Quarterly, Sept 1983, pp 10-19).

Other authorities are not convinced that off-the-shelf software is enough. Australian arts organisations will need to assess the range of options and make their own decision.

(b) The "in-house-versus-computer-service-bureau" debate:

It is possible to:

- have one's own computer ("In-house").
- share time on an outside computer.
- send one's computing work out to be processed by a computer service bureau.

The relative costs and benefits of these approaches need to be assessed.

APPENDIX VIII

GOALS OF THE NATIONAL INFORMATION SYSTEMS PROJECT

Source: Cok, Mary Van Someren, All in Order:

Information Systems for the Arts,
National Assembly of State Arts Agencies, Washington, 1981

The National Information Systems Project is a four-year, federally funded program to establish a national standard for information systems in public art agencies. Begun in September, 1978, the project was adminstered for one year by the New England Foundation for the Arts before being turned over the the National Assembly of State Arts Agencies (NASAA) in 1979. These are the goals of the National Information Systems Project:

I. To arrive at national compatibility in both the organization and labelling of information used by public arts agencies through:

   A. standardizing terms and definitions, (e.g. similar labels for similar pieces of information);

   B. standardizing methods of collecting, organizing and disseminating information (e.g. forms, reports and other documents).

II. To develop standard systems for:

   A. mailing lists - with the capability of selecting particular constituents for specific types of mail;

   B. grants management - with the capability of tracking the grant-making process and permitting analysis of grant programs by fiscal year, arts discipline, political or geographic area, organization, budget size, etc.;

   C. arts resource directories - with the capability of providing detailed information on artists and arts organizations, performance and exhibition spaces, arts festivals and presentors of arts events.

III. To make possible the exchange and analysis of comparable arts data on a national basis by:

   A. assisting state and regional arts agencies in implementing the standard systems with
      1. small grants for consultants, training, staff, and equipment or computer programs;
      2. educational workshops, publications, and technical assistance;

B. beginning dialogue among public arts agencies on future maintenance of and adherence to the standard systems, and on responsible use of the information which will be available.

PROPOSED BUDGET

The Art and Technology Committee recommends that the Australia Council seek funding to assist with the dissemination of the arts via the electronic media, research, & artists working with new technology (including artists-in-residence).

The following budget is proposed:

Project Budget	$000	
- grants to artists (e.g. artists-in-residence, travel grants, project grants)	220	
- research on artists' and arts organisations' requirements for technology (artists' and arts organisations' use of new technology, their perceived requirements, and ways in which those requirements can be met)	70	
- computer/information systems research and projects	120	
- dissemination of arts via electronic media	130	
- assistance to arts organisations with marketing their product to electronic media	20	560
Administrative Budget		
1 full time staff member	30	
1 part time staff member	20	
Publications	10	
Consultancy services	20	
		80
		640

BIBLIOGRAPHY

THE ARTIST IN AUSTRALIA TODAY
Report of the Committee for the Individual Artists Inquiry
Australia Council, 1983

ARTS COUNCIL OF GREAT BRITAIN
"New technology opportunities for arts organisations" in
Information Bulletin
No. 35 Sept. 1980, p. 2

BELL, PHILIP, & BOEHRINGER, KATHE
Australia into the 80's: proceedings of 2 national conferences held at the University of NSW, Nov. 1977 & Nov. 1978, to examine the employment, social and political implications of communications and technology
Sydney: Communications, Technology and Control Foundation, 1979

BENJAMIN, Walter
"The work of art in the age of mechanical reproduction" in
Illuminations
Glasgow: Fontana/Collins 1979

BROKENSHA, Peter and TONKIN, Susan (eds)
Future challenge: the proceedings of an international conference of arts administrators, March 1982
Adelaide: The Graduate Programme in Arts Administration of the South Australian Institute of Technology

BURT, Warren
"Frontiers of sound" in Australian Microcomputer Magazine August 1983 pp 24-25

BUSINESS VOLUNTEERS FOR THE ARTS
A buyer's guide to microcomputers for non-profit arts organisations
Seattle: 1983 Business Volunteers for the Arts

CHISMAN, M.
"Producing computer poetry" in Best of Creative Computing II
Creative Computing Press 1977

COK, Mary Van Someren
All in order: information systems for the arts
Washington: National Assembly of State Arts Agencies 1981

COMPUTER CONFERENCE

New York State Council for the Arts

1982

COURTER, Gay

"Word machines for word people" in Publishers Weekly

February 13 1981 pp 40-43

DAHLIN, Robert

"Watch that book!" in Publishers Weekly

March 20 1981 pp 24-30

DE GRAZIA, Sebastian

Of time, work & leisure

New York: Anchor Books, 1964

DEVELOPING HIGH TECHNOLOGY ENTERPRISES IN AUSTRALIA: A REPORT

prepared by the High Technology Financing Committee of the Australian Academy of Technological Sciences

Canberra: AGPS 1983 (ESPIE REPORT)

HECTOR, Gary

"Sighting profits in holography" in Fortune

May 16, 1983 pp 164-168

HURWITZ, AL

"On advanced technology - related art teaching at the primary and secondary schools of Newton, Mass., USA" in Leonardo Vol 10 pp 101-105

THE INDEPENDENT PRODUCERS HANDBOOK OF SATELLITE COMMUNICATIONS

Publication funded by the Media Arts program of the National Endowment for the Arts, Washington

FRANKE, H.W.

Computer Graphics - Computer Art

Phaidon, 1971

GIDNEY, Eric

Artists use of new technology: report on professional experience programme, Feb-July 1981

Sydney: City Art Institute

JONES, Barry

Sleepers, wake!

Technology & the future of work

Melbourne: Oxford University Press 1982

KASSAK, Nancy, & MOORE, Lou (eds)

Computers & the performing arts

New York: Theatre Communications Group

KLUVER, Billy

E.A.T. Bibliography

Experiments in Art and Technology

New York: 1977

LEAVITT, R. (ed)

Artist and computer

Creative Computing Press, 1976

NATIONAL TECHNOLOGY CONFERENCE BACKGROUND PAPERS

Dept of Science and Technology

Canberra 1983

A REPORT ON THE ART AND TECHNOLOGY PROGRAM OF THE LOS ANGELES COUNTY MUSEUM OF ART 1967-1971

Los Angeles: L.A. County Museum of Art, 1971

RHEES, David
Creating museum exhibitions about computers: a guide to resources
Washington: Association of Science - Technology Centers
1981
(contains bibliography)

SHORE, Herbert
Art in a technological society: report of a conference convened by the Centre for Study of the American Experience
Los Angeles: The Arts, Culture and Technology, 1980

TOPPER, D.R. & HOLLOWAY, J.H.
"Interrelationships between the visual arts, science and technology: a bibliography" in Leonardo
Vol. 13, 1980 pp 29-33

URICE, John
"Computer software & the arts: the new evolution" in Connections Quarterly
Sept 83 p 10-19

TECHNOLOGICAL CHANGE IN AUSTRALIA Report of the Committee of Inquiry

(MYER REPORT)

Australian Parliamentary Papers nos. 216-219 1980

4 volumes

WILLIAMS, Iwan

Computers and arts management: a paper for discussion

London: Calouste Gulbenkian Foundation 1982

(Focusses on the applications of computers in small arts organisations)