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The multifunction polis: A catalyst for change in the 21st Century

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Abstract

The proposal to establish a Multifunction Polis in Australia emerged at a time when Australia was confronting a number of challenges. The challenges were a result of four inter-related macro factors - globalisation, internationalisation, technological change and an expanding Asian consumer market. This report examined potential roles of the finance sector and also the Australian Bank Employees' Union in participating in, and contributing to, the development of the Multifunction Polis initiative.

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THE MULTIFUNCTION POLIS: A CATALYST FOR CHANGE IN THE 21ST CENTURY

Prepared for the
Australian Bank Employees Union

by

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1. INTRODUCTION

1.1 Challenges for Australia: 1990 and beyond

The proposal to establish a Multifunction Polis in Australia has emerged at a time when Australia is confronting a number of challenges. These challenges result from four inter-related macro-factors - globalisation, internationalisation, technological change, and an expanding Asian consumer market.

1.2 Globalisation

'Globalisation' effectively means that national economies and markets are no longer isolated but are strongly affected by international events.¹ This is due to the increasing convergence and interdependence of international economies and markets and is a relatively recent feature of the world economy.² This process contributes to the increasing rate of technological change and the globalisation of capital markets.

Two Australian responses to globalisation were reflected in the floating of the Australian dollar, with major effects on the banking and financial services sector, and the progressive removal of tariff structures. These measures were adopted in a bid to make Australian industries more competitive in a globalised marketplace.

Globalisation can be perceived as an opportunity or a threat. An opportunity if Australia's economy can be reformed to take advantage of the subsequent new economic conditions, or a threat, if no further adaptive measures are implemented to suitably reposition ourselves within them.

1.3 Internationalisation

In response to globalisation, firms and nations need to 'internationalise'. Effectively a process of integration into the world marketplace is required for competitive repositioning within this new economic framework. Australian firms must now compete not only in the domestic marketplace, but also in the international arena.

The problem for Australia is that although its internationalisation of consumption is well advanced, this has not been matched in its industrial production and export activities.³ What this means, in simple terms, is that our imports exceed our exports. Figure 1.1 graphically demonstrates Australia's poor trade performance compared to other nations. The consequence of this is a trade deficit, and a severe balance of payments problem which keeps the cost of money high in Australia, pushing up both the cost of living and the cost of production.

Australian firms/organisations responding to this scenario, need to buy their goods on a quality and price competitive world market. To support this purchasing access to global goods, Australian firms must themselves sell their goods in this same market. Australian firms which remain uncompetitive will become casualties of the international marketplace. However, successful firms will demand increased quality in the provision of goods and services and thereby initiate a flow on effect to other domestic industries.

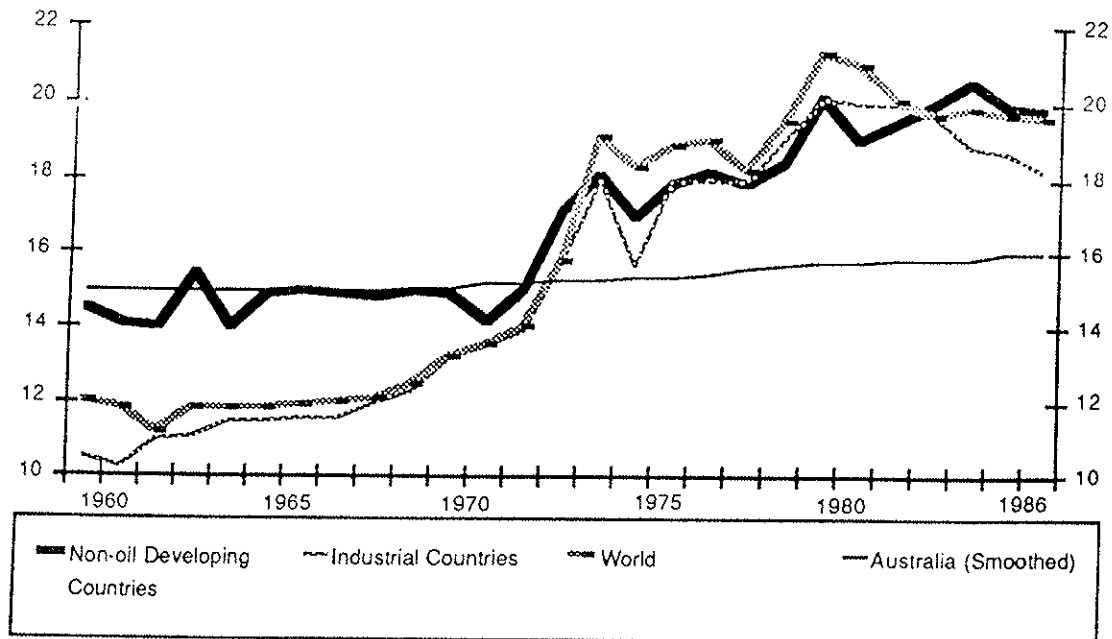
Research on successful industrial performance in this new world competitive environment demonstrates the critical importance of user-producer relations between leading edge firms and their customers. In Australia, banks' needs as leading edge performers, have led to the development of Australian software in electronic financial services.

¹ Bureau of Industry Economics, Globalisation: Implications for the Australian Information Technology Industry, AGPS, Canberra, 1989, p.xiii.

² Scott-Kemmis, D., Darling, T., Johnston, R., Innovation for the 1990s: New Challenges for Technology Policy and Strategy, AGPS, Canberra, 1989, p.6.

³ Scott-Kemmis, D., Darling, T., Johnston, R., Collyer, F., and Cliff, C., Strategic Alliances in the Internationalisation of Australian Industry, AGPS, Canberra, 1990, p.2

Figure 1.1 Share of External Trade in Economy: Exports as Percentage of GDP



Consequently, internationalisation of Australian industry and in particular the development of specialisation in internationally competitive industries with high export growth is one of the central challenges of the 1990s.⁴

Increased competitiveness through internationalisation cannot be achieved without addressing microeconomic issues such as:

- further reform of transport infrastructure, such as shipping, airlines, railways, etc, to enable the domestic market to survive international competitive pressures. Hence the immediate concern with waterfront reform and the financing of airline expansion;
- industrial relations and award restructuring and the need for management and unions to change work practices and operational procedures, to increase productivity and achieve higher levels of flexibility and quality in goods and services;
- the restructuring of industries to meet challenges presented by the removal of tariffs; and
- the growing recognition of the need for synergistic relationships between industry, research institutions and universities.

1.4 New technologies

Recent technological developments, particularly in the microelectronics cluster, are playing a major role in assisting the processes of globalisation and internationalisation, at the same time they are also contributing to increased international competition.⁵

Examples of these developments are to be found in telecommunications and transportation producing new systems for the provision of goods and services such as Electronic Data Interchange and Computerised Inventories. New

⁴ Scott-Kemmis, D., Darling, T., Johnston, R., Collyer, F., and Cliff, C., *op.cit.*, p.1.

⁵ Bureau of Industry Economics, *Globalisation: Implications for the Australian Information Technology Industry*, AGPS, Canberra, 1989, p.xiii.

systems are also emerging in the production, management and distribution of knowledge, eg. the Pegasus network which allows people concerned with environmental issues to exchange information and strategies through the worldwide resources of the Association for Progressive Communication (APC). This network enables the opening up of the dialogue between the green movement and industry.

Another example of this phenomenon is provided by the computer-linked networks which enable national and international library searches to be conducted.

1.5 The expanding Asian economies

The expanding Asian consumer market will present major international economic opportunities for Australia over the next twenty years.⁶ According to John Button, the then Minister for Industry, Technology and Commerce:

Rising Asian affluence will be accompanied by greatly increased demand for sophisticated and differentiated manufactured products, improved infrastructure and high quality services in areas such as health care, education, telecommunications and leisure related activities'.⁷

Following the deregulation initiatives of the Hawke Government, a major policy debate, "the level playing field" hypothesis, has been concerned with whether there need to be complementary initiatives to achieve the required structural adjustments to position Australian firms in the global market.

While there is general consensus that micro-economic reform is needed to increase competitiveness, there is a range of opinion about what forms of government interventions are required to support Australian initiatives around increased internationalisation.

Australia can no longer afford to be an inward looking nation. The forces of change which are shaping the fortunes of contemporary Australia lie beyond our shores. They are vastly different to those with which the majority of Australians have been accustomed to during their lifetimes.

The Multifunction Polis is one strategy that is being explored to harness private sector energy, rather than government investment, to increase the synergistic relationship between industry, research institutions and universities.

2. THE MULTIFUNCTION POLIS: A CITY OF THE 21ST CENTURY

2.1 The MFP concept

Japan and France, both leading users and producers of telecommunications goods and services, have experimented with the development of technopolises - new cities established around micro-electronics research and business development.

For a number of reasons associated with Japan's increasing international role and its concern to provide leadership in the Asia-Pacific region on the basis of a new relationship with member states in this region, Japan has initiated Australian involvement, in the creation of a special type of technopolis in Australia - the MFP.

This polis (Greek for city) is proposed as a model city for 21st century conditions, arising out of the new possibilities for urban living associated with telecommunications, internationalisation and an information intense environment.

⁶ Garnaut, R., Australia and the Northeast Asia Ascendancy, AGPS, 1989.

⁷ Button, J. in Bennett, R. Ten Years by Ten Opinions, Magenta Press, Victoria, 1989, p.10.

Because this vision is built around information technology concepts, internationalisation and new lifestyles associated with these developments, rather than traditional concepts of urban planning, such as those used to design and build Canberra, the MFP is a series of linked concepts, rather than a physical design proposal for a new city.

The consultants' report by Arthur Andersen to the Joint Australia/Japan MFP Secretariat is widely regarded as an inadequate design concept for a viable MFP. Because of this, no clear design concept yet exists to underpin the MFP development. However, Adelaide has emerged as the site for the MFP experiment on the basis of the following factors/concepts:

- the systems city - a new state-of-the-art Information Utility and knowledge network;
- the university city - guaranteeing the availability of the knowledge and new skills to maintain a leading position;
- the ethos of organised collaboration between research and enterprise to translate knowledge into new services and products for international markets;
- stable, accessible government with a commitment to the future;
- a strong and growing new industry base relevant to the 21st century.⁸ (An example of this is the Adelaide submarine project.)

The advantages Adelaide offers are:

- public ownership of the land proposed for the site;
- high technology infrastructure;
- an urban area with capacity for infrastructure expansion;
- the South Australian economy needs re-direction;

Major concerns that the MFP experiment will have to address include:

- the problem of enclave development;
- the fear of Japanese control and 'brain drain' through their investment dominance;
- the need to ensure the MFP population is truly international;

These concerns are addressed in the conditions set out for MFP development by the Australian Federal and State Governments. (see Appendix 1)

⁸ Adelaide MFP Committee, Adelaide MFP proposal, 1990, p.4-2.

2.2 A long-term vision for Australia

It has long been recognised that Australia lacks a long-term strategy and direction. The MFP project has provided the opportunity for Australia to develop a long-term sustained vision designed to anticipate and appropriate innovative and futuristic concepts in the anticipation of applying and developing them for both domestic and international markets.

At this stage of design development, the economy of the MFP-Adelaide is based on the following industries:

- information technology and telecommunications;
- education;
- environmental management, including agriculture, food processing and horticulture;
- health services;
- media.⁹

In order to investigate financial services opportunities that will result from the MFP, it is first necessary to understand the information technology and telecommunications infrastructure proposed.

3. INFORMATION TECHNOLOGY AND COMMUNICATIONS

3.1 A key industry sector in the MFP

Information technology and telecommunications have been identified amongst the key sectors which would contribute to the economy of the MFP. The strategic importance of these industry sectors should not be underestimated. This is illustrated by the recognition that 'information technology and telecommunications will be the dominant feature of 21st century industrial and commercial activity'.¹⁰ These industries will play a major role in contributing to the ability of the MFP to 'lead and influence the world in the industries of the future'.¹¹

Four roles have been identified for information technology and telecommunications within the MFP. These technologies will enable the establishment of a strategic 'fourth node' in the international telecommunications network, provide an advanced communications infrastructure network, provide the basis for research and development, and offer education and training opportunities.

3.2 The strategic 'fourth node'

The current international communications network consists of three nodes sited at London, Tokyo and New York. Studies which examined possible industry opportunities for the MFP identified the potential for the establishment of a 'fourth node' at the site.

Negotiations are currently underway for the establishment of a major data-processing node in Adelaide. The node will be connected to world wide networks and will be the largest such node in the time zones between India and Japan. As a result, it will undertake non-indigenous processing, support day-time operations of leading Asian business centres, and act as a back-up facility.¹²

⁹ op. cit., p.4-9.

¹⁰ op. cit.,

¹¹ op. cit., p.4-2.

¹² op. cit., p.4-10.

3.3 Advanced infrastructure

An advanced information technology and telecommunications infrastructure will significantly contribute to the efficiency and competitive ability of businesses sited at the MFP.

The infrastructure would incorporate

'premise-based fibre optic cables, broadband ISDN capabilities and other advanced technologies as they became available to provide a complete range of value-added services to homes and businesses. An advanced infrastructure of this nature would enable the fusion of computer, video, facsimile and telephone systems'.¹³

It is envisioned that these 'new communication systems will change lifestyle as much as television, radio and the telephone have changed lifestyles in this century'.¹⁴

3.4 Research and Development

The MFP offers a number of opportunities for the establishment of information technology and telecommunications research and development facilities.

Potential opportunities which have been identified for general information technology and telecommunications research and development in the MFP include: digital communication; signal and image processing; software engineering; and knowledge networks.¹⁵

More specific opportunities have been identified in the following areas:

- A natural language conversion centre specialising in developing applications for the automatic conversion from one language to another;
- User-friendly intelligent telecommunications equipment specialising in applications such as voice interaction, artificial intelligence, and multiple functionality and security;
- Value-added services such as business information services, financial services, information storage and retrieval services, news services, and market information services.¹⁶

3.5 Technology transfers

The MFP also offers significant potential for technology transfer from participating international corporations. According to the Minister for Science, Technology and Commerce, Simon Crean:

'The multifunction polis (MFP) is one government incentive which is expected to offer an environment for technology transfers ...[and] is an important step for the computer industry if it can be implemented correctly'.¹⁷

¹³ MFP Australia Research Ltd., Executive Summary of the Multifunction Polis (MFP) Proposal for Sydney, New South Wales, Australia, 1990, p.21.

¹⁴ Adelaide MFP Committee, Adelaide MFP proposal, 1990, p.4-2.

¹⁵ op. cit., p.4-3.

¹⁶ MFP Australia Research Ltd., Executive Summary of the Multifunction Polis (MFP) Proposal for Sydney, New South Wales, Australia, 1990, p.21.

¹⁷ Mantis, T., 'Crean will focus on strategic industry links', Pacific Computer Weekly, 27/7/90, p.21.

3.6 Education and training

Two factors contribute to the MFP's strategic potential for offering education and training in information technology related areas. Due to the MFP's focus on information technology and education, there is significant potential for establishing an information technology training centre for the Asia/Pacific region. As such, it would be able to capitalise on the shortfall in information technology skills in Asia and Japan.¹⁸

4. FINANCIAL SERVICES IN THE MFP: THE DEVELOPMENT PROCESS

Investigations into the extent and scope of specific studies examining the types of services which might be offered within the MFP environment revealed that two processes had been initiated.

4.1 MFP financial services 'think tank'

Firstly, a number of 'think tanks' were established by the MFP Joint Secretariat to investigate the roles that various industry sectors might play in the MFP. However, enquiries made by this office into the nature of, and conclusions reached by, the 'think tanks' were relatively fruitless.

For example, in the course of investigations it was established that the Finance industry 'think tank' met once only. It was revealed however, that the participants in this particular 'think tank' group agreed that, by international standards, the Australian banking industry sector was well advanced in the deployment of leading edge information technologies, and could therefore play a valuable role within the MFP context.

4.2 The banks' input

Secondly, a number of banks were approached by the MFP-Adelaide Committee 'to develop a range of services that actively support the concept of an international city'.¹⁹ However, at this point, relatively little work has been undertaken in this area.

4.3 Opportunities for ABEU contributions

This state of affairs offers significant opportunities to the ABEU in that it will be in a strategic position to make major contributions to the shaping of future discussions due to the relatively immature development stage of this process.

5. POTENTIAL DIRECTIONS FOR FINANCIAL SERVICES: MFP AND BEYOND

Although the formulation of potential MFP financial services is not well advanced, a number of insights into the possible role financial service providers may play in the MFP has been provided by comments made by the Australian Chairman of the Joint Australia/Japan Steering Committee, and Chief Executive of the ANZ Bank, Mr Will Bailey.

¹⁸ MFP Australia Research Ltd., Executive Summary of the Multifunction Polis (MFP) Proposal for Sydney, New South Wales, Australia, 1990, p.21.

¹⁹ Adelaide MFP Committee, Adelaide MFP proposal, 1990, p.4-7.

5.1 Structural changes in Australian financial services provision

Although Mr Bailey has not specifically examined the role that domestic financial institutions might play in the MFP, he has discussed the direction financial services might take in the decades ahead.

From his treatment of this topic it is clear that he expects the manifestation of major changes in the Australian banking industry. Regarding the structure of the banking industry in Australia he argues that:

'There will be room for more players. Long term Australia may have two or three major banks in the mass markets, up to ten in the boutique level and maybe a further twenty in the smaller, highly specialised, financial services area.

Some banks will focus on being big financial services supermarkets. Others will be financial specialty stores, dedicated to the needs of specific customer groupings offering high priced money products with ultra-high levels of service. In decades to come, banks will play the niches they know best and some of the smaller banks will have a very tight customer focus indeed'.²⁰

5.2 A revolution in customer services

Mr Bailey's examination of customer services reveals that he foresees:

'...a dramatic change in the way banks interface with customers in the nineties. The technology already exists for a bank to provide a customer with virtually any financial service they they want at a practical price the customer wishes to pay.

Banks are going to be making financial services on order for customers. And the majority of banking will take place electronically in a computer. This will sometimes be in the bank branch, but more often outside in a large office block, in shops, factories, a pub or a club'.²¹

5.3 The potential for offshore banking facilities

One of the opportunities identified by Mr Bailey consists of an offshore banking centre to 'replace or at least compete with Hong Kong'.²² He argues that:

'When Hong Kong went through its most recent tribulations, Australia should have jumped in. Australia is in the same time zone as Tokyo. It is much cheaper, not surprisingly, to do the same time zone non-related banking in this country than it is in Tokyo. The infrastructure costs are much less. Any time Hong Kong becomes a worry in political or social terms, an Australian or offshore facility would look more and more attractive. Right now the business is going to Hong Kong, Singapore and London, but Australia should be in there'.²³

If the MFP did become the site for the 'fourth node' in the international telecommunications network, the capability for the provision of offshore banking facilities in Australia would be enhanced enormously.

²⁰ Bailey, W. in Bennett, R. *Ten Years by Ten Opinions*, Magenta Press, Victoria, 1989, p.32.

²¹ *op. cit.*, p.33.

²² *op. cit.*, p.22.

²³ *op. cit.*, p.22.

5.4 Advanced financial service provision opportunities in the MFP

As noted previously, the 'Financial Services Think Tank' procedure did not proceed beyond an initial meeting. The development of financial services by the banks for the MFP is also at an early stage.

Nevertheless, a number of extrapolations can be made based on the comments of the Australian Chairman of the Joint Australia/Japan Steering Committee and previous research undertaken in the area of developments in information technology in the financial services sector by the Centre for Technology and Social Change (TASC).

The advanced information technologies being adopted by Australian financial services organisations have not been utilised to their full capacity due to a lag in the deployment of an advanced telecommunications infrastructure. The integration of communications technologies such as optic fibres and ISDN into the MFP infrastructure will enable financial services technologies to fulfil their innate potential.

For example, optical disc storage and retrieval systems in combination with fibre optic telecommunications would mean that document images could be electronically transferred between branches. This would make the current interbranch transfer of vast quantities of paperwork obsolete.

Another example could be the electronic transfer of updated financial services information to interactive video terminals from a central head office.

The increasing convergence of a number of information technologies into integrated systems also provides significant opportunities. As an advanced telecommunications infrastructure becomes nationally and internationally generalised, the deployment of advanced banking services could rapidly follow.

5.5 Research and Development of electronic financial services

Australian banks allocate huge financial resources to research, development and deployment of information technology applications. The MFP would provide an ideal site for further research and development work on, and piloting of, advanced Financial services information technology applications.

Due to the diverse nationalities of participants, the MFP would provide the ideal site for the development of multi-lingual electronic banking services. Following successful development and piloting, these services could be marketed internationally.

6. INDUSTRIAL RELATIONS ISSUES

The MFP offers significant opportunities for forging 'leading edge' industrial relations agreements reflecting innovative issues arising within a city of the 21st century. As such, it will enable the development of prototype industrial agreements between unions and management embodying models which may, at a suitable stage of evolution, be adapted for use within the wider community.

Some of the issues which may be addressed in this environment include:

- Enterprise flexibility;
 - 'Greenfields' structural efficiencies
 - single union agreements based on Section 115 of the Industrial Relations Act
 - special industrial relations agreements or 'island industrial agreements' of the type successfully implemented on major projects such as the Sydney Harbour Tunnel project.

- Labour market flexibility;
 - the provision of services such as child care, health provisions etc
 - multi-skilling
 - location of work
 - the status of employees, consultants and the self employed
 - a new relationship between work and home (teleworking)
 - Clarification of permanent part time, full time, casual, and job-sharing employment categories
 - the status of migrant/foreign workers in the MFP international workforce
 - base rate wage, merit pay, profit sharing and staff shareholding dividends
 - training and skilling.

7. THE ROLE OF THE UNIONS

A number of specific industrial relations issues which may need addressing by unions in the MFP context have been identified above. However, the unions will also have an important role to play in issues that may not traditionally fall within their scope of involvement.

Certain segments of society may voice disapproval over particular aspects of the MFP, but be powerless to either monitor, or make strong representations regarding their concerns. In this respect, the unions can bring these issues forward for attention and thereby constructively contribute to a wider perspective on issues.

By supporting the MFP proposal, the ABEU has established that it recognises the MFP's potential for competitively repositioning Australia within the changing international environment and thereby serve a wide concurrence of shared interests between employees and employers.

Through the monitoring of, and provision of input into, the MFP visioning process, the ABEU is in a position to make significant contributions towards the gradual evolution of the MFP.

8. CONCLUSIONS

Even if the MFP does not proceed beyond the conceptual stage, the gathering together of a vast number of experts and visionaries sharing the common goal of creating a long-term vision for propelling Australia into the 21st century has been valuable in itself. This type of long-term planning activity should not only be welcomed, it should be actively encouraged.

If the MFP is implemented, this process should not be abandoned, it should be sustained to continue breathing vision into the MFP as it evolves into reality over the next twenty to thirty years.

For example, a proposal submitted by TASC and ABRI, proposed a public consulting design system "Strategic Innovation" which would use advanced decision support software to enable public interest groups across Australia to participate in the generation of innovative solutions in the continuing development of the MFP. Pegasus provides a model for this networked approach to idea generation around complex policy issues.

The types of challenges and problems which will be encountered in the processes involved in bringing the MFP into actuality will, in itself, create leading edge knowledge. Every step of the way, Australians will have the opportunity to be international leaders in architecture, urban planning, social planning, and environmental planning.

This is not to argue that the MFP can be the panacea for all of Australia's economic ills. However, it is surely illustrative of the method of long-term planning which has proved so successful for Japan, and is presently lacking, but required, in Australia.

APPENDIX 1

Statement of Principles Agreed to by Australian Federal and State Governments

1. The development of an MFP based around internationally traded information, education and training, leisure and tourism, and research and development activities, should be in Australia's interest, with particular emphasis on the pursuit of scientific and technological excellence. The MFP should be developed as a way of assisting structural change in the Australian economy geared towards the development of an internationally competitive and export oriented industry structure.
2. Fundamental to the competitive advantage of the concept will be the development of leading edge infrastructure in areas such as telecommunications, information and education.
3. The MFP should be truly international in terms of its links with the world economy, its investment sources and the people participating.
4. The MFP will be developed as an entity which is not an enclave but is linked with the remainder of the Australian economy, providing a leading edge testbed and technology transfer.
5. Further work be undertaken on the assumption that the proposal will only proceed to fruition if it can mobilise significant private investor support, particularly in Japan and other countries, which results in a net addition to available capital resources in Australia.
6. The MFP not be financed through the provision of special location-specific Commonwealth and State subsidies.
7. The feasibility study investigates a range of urban development options, including those involving multiple sites, all of which assume that the MFP not be a cultural enclave, but rather be integrated with the remainder of Australian society.
8. The Commonwealth Government have carriage of all negotiations with the Japanese Government for the implementation of the Multifunction Polis principles. The States may discuss commercial proposals and provide information to Japanese Government representatives.
9. The Commonwealth and State Governments are committed to examining the regulatory environment with a view to facilitating investment in the MFP. In particular, the Commonwealth Government will examine the climate for the movement of people, money and goods in a positive way so as to enhance the MFP proposal.

BIBLIOGRAPHY

- Adelaide MFP Committee, Adelaide MFP proposal, 1990.
- Andersen Consulting and Kinhill Engineering, Multifunction Polis Final Report, 1990.
- Bennett, R. Ten Years by Ten Opinions, Magenta Press, Victoria, 1989.
- Bureau of Industry Economics, Economic Evaluation of the Multifunction Polis, Department of Industry Technology and Commerce, Canberra, 1990.
- Bureau of Industry Economics, Globalisation: Implications for the Australian Information Technology Industry, AGPS, Canberra, 1989.
- Garnaut, R. Australia and the Northeast Asian Ascendancy, AGPS, Canberra, 1989.
- Joint Steering Committee to the Australian and Japanese Governments, Multifunction Polis Feasibility Study 1990.
- Lepani, B., Johnston, R., Currie, J., et.al., New Technologies and the Australian Secondary School Student, TASC, 1990.
- Mack, M. 'Multifunction Polis to change SA skyline - and economy', Computerworld, 3/8/90.
- Mantis, T., 'Crean will focus on strategic industry links', Pacific Computer Weekly, 27/7/90.
- MFP Australia Research Ltd., Executive Summary of the Multifunction Polis (MFP) Proposal for Sydney, New South Wales, Australia, 1990.
- Multifunction Polis Joint Secretariat Ltd., Multifunction Polis: A Concept to Create the Future, 1989.
- Scott-Kemmis, D., Darling, T., Johnston, R., Innovation for the 1990s: New Challenges for Technology Policy and Strategy, AGPS, Canberra, 1989.
- Scott-Kemmis, D., Darling, T., Johnston, R., Collyer, F., and Cliff, C., Strategic Alliances in the Internationalisation of Australian Industry, AGPS, Canberra, 1990.
- Scott-Kemmis, D., Darling, T., Johnston, R., Technology Policy for the 1990s: Lessons of the 80s, Centre for Technology and Social Change, 1990.
- Yencken, D. Multifunction Polis: Social Issues Study, AGPS, Canberra, 1989.