TRANSLATING THE MFP: NATIONAL INNOVATION MANAGEMENT POLICY, HIGH TECHNOLOGY INCUBATORS AND AUSTRALIA-JAPAN RELATIONS

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The drive by governments to find new means of managing technological change in the quest for competitive advantage has led to an expansion in the international construction of high technology incubators for the purpose of accelerating innovation rates. In 1987 the Japanese Ministry of International Trade and Industry (MITI) asked the Australian government to jointly build in Australia a 'city of the future' known as the Multifunction Polis (MFP) which would incubate high technology industries for the twenty-first century. An analysis of the curious course of MFP design negotiations sheds light on a number of important issues including cultural differences in constructing solutions to national innovation problems and the use of the promise of innovation in shaping international relations.

Keywords: Multifunction Polis, MFP, national innovation systems, innovation management, high technology incubators, Australia-Japan relations.

INTRODUCTION

In recent years the drive by governments to find new means of managing technological change in the quest for competitive advantage has led to an expansion in the international construction of high technology incubators for the purpose of accelerating innovation rates. This spread of high technology incubators became an important part of international relations when in the late 1980s the Japanese and Australian governments began to jointly design one such development known as the Multifunction Polis (MFP). The MFP design negotiations still officially continue today and an evaluation of the curious course of events sheds light on a number of important issues including cultural differences in managing national innovation problems and the use of the promise of innovation in shaping international relations.[1]

In 1987 the Japanese Ministry of International Trade and Industry (MITI) asked the Australian government to jointly build in Australia a 'city of the future' which would incubate high technology industries for the twenty-first century and the project was accepted for consideration by the Australian Department of Industry, Technology and Commerce (DITAC). MITI described the project as follows:

> The aim of this project is for Japan and Australia, located at the northern and southernmost edges of the Pacific Rim, to cooperate in the construction of a multifunctional "City of the Future" which could present new ideas for new industry and life in the 21st century while serving as a centre for cultural and technological exchange in the Pacific. The MFP will involve the growth of "high-tech industries" in information and life science technologies and "high-touch industries" oriented to resort life, fashion, and culturally oriented pursuits. These unique industries are expected to promote the germination and fusion of a wide variety of technology and know how and spur the growth of new industries...[2]

Major claims were made by both sides on the potential advantages of the project. MITI asserted that among other things it would 'pave the way for the Pacific Era', while John Button, then Minister for DITAC called it 'potentially the most significant development in Australia-Japan relations for four decades...with more profound significance for Australia's international business linkages than anything else attempted by us over the same period.'[3] This public enthusiasm for the project was framed by the current state of Australia-Japan relations and the booming international interest in high technology incubators as 'magic bullets' for national innovation problems.

MFP presented as bringing about a new era in Australia-Japan relations

In 1986 tension had been rising between the Australian and Japanese governments as they renegotiated trade relations.[4] In the early 1980s Japan had replaced the USA and Europe as Australia's major trading partner. However this new relationship began to encounter difficulties following the steady drop in primary commodities prices. The Australian government, seeking ways to restructure their economy away from a primary commodities basis, began pressuring the Japanese to decrease investment in land and resort holdings and increase spending in the manufacturing sector. Japan had become the fastest growing foreign investor in Australia but in most years only 2% of their investment had gone into industry while 60% had flowed into real estate.[5]

In May, 1986 Prime Ministers Nakasone and Hawke met in Canberra and agreed to an exchange of investment missions. In November of that year John Button and fifty Australian executives travelled to Japan in an attempt to stimulate investment interest. Though seminars were reported as well attended, no substantial action ensued.[6] By the end of 1986 the Australian government was wary of Japanese proposals which would not substantially refigure their investment profile and trade tension had caused an impasse in relations. With the prospect of meeting in January 1987 at the Australia-Japan Ministerial talks in Canberra, the Japanese side began casting around for ways to ameliorate friction when they again cut coal prices. MITI stepped into the breach and presented the MFP as a way of alleviating tension.

The MFP as an innovation management strategy

The MFP offer was presented within the context of international interest in a vari-

ety of new innovation management strategies and in particular the use of high technology incubators.[7] From the 1970s onwards attention from both the public and private sectors had begun to focus on the formulation of new innovation management strategies aimed at increasing economic advantage in the global market and in particular the resolution of perceived national innovation problems. Influential theorists such as Michael Porter and Lester Thurow emphasised management of technological change as a means of gaining economic advantage, pointing to Japanese strategies in particular.[8] In the 1980s the field of innovation management theory began to expand rapidly with the majority of theorists seeking ways of modelling the innovation process in order to derive practical recommendations for use by business and government. At the same time the success of special urban settlements like Silicon Valley and Route 128 in the USA, in producing high innovation rates began to stimulate interest. As a result studies were made of the Silicon Valley 'black box' in order to reproduce it elsewhere and high technology incubator design theory was born.

High technology incubators are defined here as special environments which are purported to increase the rate of technological innovation and the proliferation of high technology industries.[9] Though they are generally noted as first appearing in the USA in the 1950s, it was in the 1980s that an exponential expansion occurred in their use world-wide.[10] These developments have taken a wide variety of styles and sizes, several even reaching city proportions and complexity of function, but four basic categories can be discerned based on a consideration of spatial arrangements such as size and presence on-site of particular elements. These categories are the city, network, zone and park styles.[11] An incubator city contains a residential area which services its population as well as fosters the innovation process. Usually all basic elements necessary for work and living are on-site. In a network incubator, participants are geographically separated but connected by information technology. A zone incubator is an area, often a part of a city, which is designated for special development but without attached residential facilities. A park incubator is usually small, does not include residential features and is designed to facilitate a specific kind of technology transfer partnership such as between university and business.

To a varying degree and in different ways both Japan and Australia took part in the international expansion in the use of high technology incubators in the 1980s. Japan used many different kinds of developments designated as incubators, with all four structural forms of city, network, zone and park represented.[12] In contrast Australia only had network and park style incubators before the MFP proposal. The reasons for this rapid growth of incubator development were quite complex and varied to some degree internationally but a single key issue remained at the heart of the enthusiasm - that was the perceived role of the incubator as a tool in the global race for competitive advantage.[13] The incubator was presented as a new technology, a designable tool, capable of producing economic advantage through its ability to accelerate rates of innovation in high technology. The MFP was hence publicly presented as a suitable vehicle for a new kind of partnership between Australia and Japan.

BRIEF HISTORY OF MFP NEGOTIATIONS

There are of course many ways that the history of the MFP could be constructed but it is illuminating to focus on the series of planning discussions in which incubator site and form were originally negotiated. The history of these negotiations can be divided into three main stages: the proffering of MITI's MFP model and its acceptance for consideration by the Australian government (January 1987-December 1987); the statement of DITAC's preferred model and the operation of the first official feasibility study which led to choice of basic form and location of the MFP (January 1988-June 1990); the second feasibility study investigating the proposed incubator-city model known as MFP-Adelaide and the Japanese rejection in March 1992 of that proposal.

Stage One: The MFP Offer and Acceptance

MITI officially presented DITAC with their first detailed offer in September 1987 in *A Multifunctionpolis Scheme for the 21st Century: Basic Concept.*[14] MITI's proposed MFP was a completely new independent incubator city with all facilities on site and a residential population of around 200,000. Three kinds of industries were proposed as being incubated: 'high tech', 'high touch' and infrastructural services. High technology fields discussed were: biotechnology, new materials and rare metals, and computer software. High touch industries mentioned were convention services and the resort industry. Infrastructure functions mentioned were: medical and health care, education and training, information and transportation systems.

MITI's city was presented as a complete innovation system incubating every kind of industry involved in maintaining city life and high technology society. More specifically the MFP city was presented as acting as an incubator in five main ways: as an experimental city; as an innovative environment; through the synergetic mix of industries; as an information city; and through the formation of a new complementary partnership between Australia and Japan. The MFP was portrayed as an experimental city which would be designed to solve existing urban problems and by doing so generate new industries which could be tested on site. One main problem cited for solution was the geographic fragmentation of urban life into separate spheres of work, home, and recreation and the absence of contact with the fourth sphere - the natural environment. MITI wanted a specially designed 'fifth sphere' city where all spheres could be recombined to enrich daily life and stimulate creativity necessary for the proliferation of new high technology industries. Synergy between industries was considered a very important element in the MFP incubator strategy as it would lead to amplification of research results and the fusion of common areas of interest to produce new kinds of industries. The MFP would function as an information city through the international exchange of ideas and people and at the same time engender its own information and databases.[15] The MFP also was presented as facilitating a new creative partnership based on complementarity of strengths between Japan and Australia. Australia was described as having good research capabilities, but a weakness in commercialisation. Japan could assist in the commercialisation process and benefit from access to Australia's highly skilled labour.

At a meeting in November, 1987, Australian State and Federal governments agreed to begin a feasibility study and formulated a list of nine principles to direct the negotiations and safeguard Australian national interests. These principles stated that the MFP must facilitate industrial restructuring through technology incubation, be privately funded, and be an international not just a Japanese driven project. The intention was to prevent the MFP from becoming a Japanese resort development subsidised by Australian government funds. A final requirement made was that the Commonwealth government retained carriage of negotiations, hence elevating the national perspective in negotiations and preventing the States from striking their own deals with MITI. These principles were to later become the cause of major tension in negotiations.

Stage Two: The Initial Feasibility Study

The period January 1988 to June 1990 was dominated by the performance of the first official feasibility study and attempts made to resolve differences between MITI and DITAC on the appropriate form and site of the MFP.[16] The process began in early 1988 with the Australian and Japanese governments jointly setting up a special network of organisations to facilitate the decision making process. The Joint Steering Committee (JSC) composed of representatives of the two governments was formed to direct the MFP feasibility study, make recommendations to the two governments on the viability of the project and provide advice on the promotion of private sector involvement. The JSC was serviced by the Joint Secretariat (JS) who monitored the progress of the official consultants the Arthur Andersen/Kinhill consortium contracted to present recommendations to the JSC on the best MFP form and site. The JS in addition acted as a mediating body between the Japanese private sector representative, the Japan Domestic Committee (JDC) and the Australian equivalent, MFP Australia Research Ltd (MFPAR).[17]

In May 1988 the JDC was composed of eighty three Japanese companies and organisations who took part in six working parties formed to look at potential MFP industries.[18] These working groups were formed to consult with the Australian side on project development; however, in fact the JDC took a very passive role in proceedings. MFPAR established eighteen think tanks, each composed of twelve to fourteen 'leaders' in Australian business, industry and academia, as part of their contribution to the feasibility study. The stated objective of these think tanks was to ascertain which MFP industries would best suit Australian industry restructuring needs and have a high probability of success.[19] MFPAR developed the results of the study into their MFP 'hypothesis' which was fed into the Arthur Andersen/ Kinhill consortium's investment marketing program.

The feasibility study was beset with conflict and tension at all levels of negotiation. At the highest level - the JSC - functioning was neither smooth nor effective. Personal problems, animosities and indifference on the part of members seemed to have led to less than adequate performance of tasks. The JSC was to have met regularly and alternately in Australia and Japan. However in one and a half years they only met four times, two of which started and ended the process. Towards the

end, the JSC only met under sufferance. The final recommendations of the JSC did not represent equal input from both sides, and the major decision concerning MFP site selection was left to the Australian side to finalise.

Without effective leadership from the JSC combined with the inadequate resolution of problems encountered by the other MFP bodies, the feasibility study began to disintegrate. The Japanese side became passive and indifferent and the Australian team began to fragment, each group attempting to pull proceedings in different directions. Internal conflict arose in the JS as the different national representatives began taking antagonistically partisan positions. The Australian side of the JS began operating independently of the original official framework, appointing their own consultants and producing their own 'working document'. Members of the JS claimed these steps were taken in reaction to perceived inadequacies in the work of the official consultants.[20] Soon other groups on the Australian side began performing additional studies, however the different reports tended to produce conflicting findings and problems reached a head in December, 1989 over site selection and the release of the Arthur Andersen/Kinhill consortium's final report.[21]

Site selection was to have taken place from August to September 1989, when State proposals were assembled and evaluated.[22] In October the preliminary site ranking was completed. Of nine applicants seven were seriously considered, that is they were ranked using specific criteria. There were four different hubs proposed by New South Wales (NSW), Victoria, South Australia (SA), and Queensland and three spokes by the Australian Capital Territory (ACT), Western Australia (WA) and Queensland.[23] The other two designs not ranked were greenfields sites in north Western Australia and along the Melbourne-Sydney VFT route. These last two sites were excluded because they did not fit into the original criteria set by the Arthur Andersen/Kinhill consortium. In the ranking process NSW seemed to come first as the preferred hub and Queensland last.[24] However there was dissatisfaction expressed by the Australian side over the proposals, and it was decided to ask the States to resubmit their plans with specific amendments including a directive made by DITAC that they find ways to link their proposals to the other states.

When it became known that all proposals had been returned for further work, the Japanese members of the Joint Steering Committee refused to attend the scheduled November 1989 meeting.[25] After further communications, the Japanese reluctantly agreed that the Australian decision on the site of the MFP should be postponed from March to late June 1990. Problems experienced in the JSC were dwarfed when in early 1990 the MFP's internal problems exploded into the media and the newly released Arthur Andersen/Kinhill report became a major issue in the run up to the 1990 Federal election.[26]

The Arthur Andersen/Kinhill consortium's final report was released to the public in January, 1990 giving recommendations on the form but not the specific site of the MFP.[27] It included an unintegrated economic model compiled by the National Institute of Industry and Economic Research (NIEIR) which had been grudgingly inserted by the consortium at the request of the JS reportedly to cover important areas untouched by the official consultancy. The combined report caused the first major MFP media furore.[28] The consortium's work was widely perceived as ex-

pensive, indigestible, utopian rhetoric, while NIEIR's model which presented the MFP as a city of 100,000-200,000 people, largely composed of highly skilled foreigners, and costing $13.5 billion Australian was also considered unacceptable. The media heavily criticised both models. DITAC responded by promising changes for the final report in June 1990 and commissioned another economic viability model from the Bureau of Industry Economics (BIE).[29]

DITAC had meanwhile released their own response to MITI's 'Basic Concept' document in their report: *The Multifunction Polis Proposal: One Australian Perspective.* in June 1988.[30] In this document DITAC, while tentatively agreeing to a semi-residential, cosmopolitan, resort 'city' serviced by advanced infrastructure which incubated high technology industries, in fact did not replicate MITI's detailed vision of the MFP as a totally new, single site, independent city. DITAC, drawing upon previous work produced for the Queensland government proposal, stated instead that the 'physical arrangements for the MFP could be any of a number of possibilities'.[31]

DITAC described their preferred model as a networked infrastructure of advanced communications, transport, education and research facilities. They were also more specific than MITI's in delineating a range of high technology, 'leading edge' industries such as: education and research (medical, marine, building and construction, space and aerospace, robotics, food processing, new materials, biosciences), information related industries such as business services, entertainment and hard/software applications. The high touch industries that were mentioned such as leisure, tourism activities and conferencing, were rationalised as being important for their ability to attract high quality personnel and investment not, by contrast with MITI's proposal, as part of the core innovation process.

MITI's exuberant discussion of an experimental city which was going to create a new kind of innovative environment was not replicated by DITAC. Unlike MITI who tightly bound their incubator city together with high technology infrastructure and service industries which functioned to create an innovative environment, DITAC was inclined to spread its incubator geographically and rely on an IT linked partnership of dynamic participants to spur creativity.[32] DITAC's preferred network model, was expressed more clearly though less publicly in their communications with the official consultants - the Arthur Andersen/Kinhill consortium - but essentially they wanted a nationwide network of sites, linked by advanced information and transportation technologies. This vision tended to remain at the core of their position through negotiations, but they were also prepared to compromise to a certain extent to ensure Japanese investment.[33]

In May 1990 the State governments put in their final proposals for judgement.[34] On June 14th the JSC offered the MFP to Queensland for location on the Gold Coast. This site seems by all accounts to have been the main Japanese choice since inception of the project in 1986. However the plans were quickly overturned. Newly elected State Premier Wayne Goss, while initially accepting the project, beat a hasty retreat when it became politically difficult to organise land acquisition. Goss, encountering opposition from a small but highly vocal group of local land owners, was reluctant to force through legislation which would enable the site to be ac-

quired for MFP development. Goss withdrew the Queensland proposal and handed the project back to the JSC for reevaluation. Acting swiftly the JSC passed on to the next choice, Adelaide in South Australia. SA State Premier Bannon, having no formal impediments to necessary land acquisition, accepted the proposal. As a result the JSC nominated Adelaide in their July, 1990 report to the Australian and Japanese governments, and at the same time recommended a further study to determine the specific viability of that choice.

Stage Three: MFP-Adelaide

The period July 1990 to March 1992 saw the elaboration of the MFP-Adelaide proposal and its consideration by the Australian and Japanese governments. These negotiations were marked by a continuation of problems first encountered in the initial feasibility study phase as well as the appearance of a new set of difficulties. Tension between the Australian and Japanese sides over the correct balance of Japanese investment and Australian provision of investment incentives became worse while division grew between the Commonwealth and South Australian governments over the direction of the project. South Australia saw the MFP as a regionally focused project, while DITAC saw it as a project whose benefits should be spread nationally. Meanwhile the Bannon government encountered strong local opposition to the MFP.

The final report on MFP-Adelaide was produced for consideration by the two governments in May, 1991. Like the original winner, the Gold Coast, but in contrast to the other major contenders, Melbourne and Sydney who offered zone and network style incubators respectively, Adelaide had constructed a city style incubator. However there were other major differences between the two successful proposals which were to become very important. One such difference was that the Gold Coast was an attractive tourist destination while Adelaide was geographically isolated, unknown at an international level and offering an unattractive core site at Gillman which had been a toxic waste dump. However in its favour the South Australian proposal was marked by its attention to town planning considerations, an emphasis on the integration between the MFP and Adelaide itself, their previous experience with incubator developments, and the conceptualisation of MFP-Adelaide as an information city.

MFP-Adelaide was to be a city composed of mixed-use villages centred at Gillman and connected with Adelaide and the rest of the world by advanced infrastructure. Each village would form its own identity depending on its industrial focus. Within the village framework and in accordance with MITI's fifth sphere city vision, residential elements were to be strongly linked to work and leisure space and the aesthetic value of the environment was presented as an important incubator planning consideration.[35] The project was to take twenty years to complete and was estimated in July 1991 to cost $839 million Australian, with $105 million Australian towards infrastructure costs to be paid by the State government.[36] Three main industries suggested were information technology and telecommunications, environmental management, and education. Other industries included health, space, tourism and leisure, media and entertainment.

In terms of fostering the innovation process the SA government used some of the same concepts proposed by the other States and added fresh ones, displaying a serious attempt to validate their proposal in light of MITI's original incubator design. Like Victoria and NSW they pointed to the quality of their local universities and their research records and proposed various new institutions to promote particular research specialities, In addition the SA government pointed to their distinctive record with previous incubator developments and emphasised their plans to build a new information city which would be an amalgamation of the MFP at Gillman and Adelaide itself.[37]

Three core projects were stressed as representing the main industry foci and contributing in a variety of ways to creating synergies. These were the Information Utility, the Environmental Management Centre and the World University. Within these three institutions there were also smaller, related elements proposed as development opportunities. The Information Utility was to function as the heart of the MFP-Adelaide incubation process by linking the 'providers' and 'users' of knowledge. Through this IT linkage it was proposed that Adelaide and MFP-Adelaide were to be integrated to form a 'systems city'. IT was not only to link major industries and institutions but also create the environment necessary for rapid innovation in much the same way as MITI had proposed in their 'city of infrastructure'. The proposed Information Utility was to function at the centre of the MFP, both serving and amplifying the efficient function of the other involved sectors. Industrial synergy was also emphasised and extensive maps were drawn of potential industrial partnerships. Another strategy of the SA government was to use MITI's concept of the creation of a challenge to spur innovation. Site rehabilitation at Gillman was presented as engendering one of MFP-Adelaide's main industries - environmental management.

The Japanese response to the final MFP-Adelaide report of May 1991 was very critical and was first communicated to Canberra through a letter sent to Button stating three main problems: a distinct lack of incentives for their investment - principally financial and infrastructural attractions; a lack of clearly defined business projects; and that the three key sectors targeted were not seen as attractive enough to pull in immediate heavy investment to start the project rolling. These same complaints were continually repeated by the Japanese side throughout 1991 and into the next year,

There was now pressure on the Australian government to find a way to unilaterally move negotiations forward. Button and Bannon signed an agreement on 31st July, 1991 saying that the MFP should go ahead. Button announced that the Commonwealth Government had approved spending of $12.27 million Australian during the next three years to be put towards what by then was the $839 million Australian needed for the project. The SA government would receive $5.5 million and the remainder would be used for DITAC's own separate MFP operations. However by August, 1991 it became clear that MFP-Adelaide and DITAC had parted ways, fragmenting the direction of the project. A whole new set of options were being considered by DITAC after MFP-Adelaide had apparently failed to capture Japanese investment. The split between SA and DITAC became public when it was

announced that the MFP project was to have a name change.[38] National projects were to be titled MFP-Australia, while development in Adelaide would remain known as MFP-Adelaide.

After pressure was mounted by the Australian government for a Japanese response, an investment mission of fifty business and industry leaders arrived on 1st December 1991. The mission delegates represented fifteen Japanese companies and industrial bodies and spent eight days visiting the Gillman site in Adelaide as well as other State capitals.[39] During the visit they indicated they were not interested in the Gillman site but in other projects, most notably in Queensland.[40] The leader, Yahiro Toshikuni, a senior adviser to the board of Mitsui & Co Ltd. and Vice-President of the Keidanren, also expressed doubts about the planning and scope of the project as well as the strength of national commitment. Yahiro then gave five preconditions for Japanese investment: provision of incentives such as tax concessions, accommodation and leisure centre construction; designation of the MFP as a national project involving the Commonwealth and other State governments as well as SA; building of attractive infrastructure at Gillman; investment by local companies, which would reflect Australian enthusiasm; and internationalisation of the MFP project with the involvement of such countries as Switzerland, Korea, Holland and France. Most of these requests once again ran counter to Canberra's determination not to provide financial incentives or to make the MFP publicly funded.

Bannon answered Yahiro by saying that Japanese companies were 'only months away from committing investment funds...', and DITAC reacted by drumming up other potential investors.[41] In the same month DITAC issued a press release stating that Korea was expressing strong interest and BHP became the first company to officially announce a firm intention to invest in the MFP. However Peter Laver, who was in charge of BHP participation in the MFP noted that '[o]urs is a conditional commitment. The last thing I want to see on the Gillman site is a solitary building with BHP logo stuck on it in the middle of a garbage dump.'[42] No major headway has been made on either of these projected initiatives as of late 1996.

Generally the MFP project was not going well in 1992 and the situation worsened when both the Australian and Japanese economies entered a major period of recession. Keating attempted to breathe new life into the MFP negotiations as part of his 'One Nation' economic policy statement issued on 26th February, 1992.[43] In this Keating promised $40 million Australian for MFP development, in addition to the earlier figure of $12.27 million Australian. As well he promised SA further rail and road projects totalling $96 million Australian to boost their infrastructure.

Keating's effort to revive Japanese interest in the MFP was closely followed by two reports which had the opposite effect. The first was the release on 1st March 1992 of a draft Environmental Impact Statement (EIS) on the MFP-Adelaide site just prior to the South Australian State elections. The report, favourable to MFP project development, was attacked by opposition politicians, environmental groups and other commentators and has since been rejected as having severely underestimated clean up requirements.[44] In March, 1992, two days after the release of the Adelaide EIS, the Japanese investment mission report was published. It ignored

Keating's February funding proposals saying that '..it could be very difficult to drag companies to Adelaide' and that the MFP 'is of course essentially an Australian project.'[45] The report basically questioned the choice of Adelaide as the site and Australian commitment to project development and rejected any immediate prospect of Japanese investment.

Since publication of the Japanese Investment Mission report, very little substantial project development has occurred. In July 1992, the MFP-Adelaide Chief Executive Ross Adler resigned, warning Bannon that tax payers may end by financing the MFP. Since then Bannon himself has resigned his position as Premier because of criticism for financial mismanagement in affairs unconcerned with the MFP. Despite all of the above problems the Australian State and Federal governments have been reluctant to let go of the project and both levels of government as of late 1996 still have MFP organisations working on project development.[46]

The MFP has been an expensive experiment for the Australian people and whether it is ever successfully revived or not, it is time that the experience was turned to immediate use. In the first years of project development up to 1991, the MFP drew substantial comment from a number of different angles. Since then commentary has become scarce but there are many reasons why it is important to now reevaluate the course of events. Japan is still our main trading partner, the course of MFP negotiations reflect certain important assumption made about national innovation problems and the role of incubators, the difficulties involved negotiations between federal and state levels of government must be addressed and lastly the MFP is still officially active.[47]

A REEXAMINATION OF MFP DYNAMICS

Given the ambitious nature of the bilateral project, there were many different kinds of factors operating, some of which could be seen as outside of the Australian government's control if not their awareness. One such factor is the position of the negotiations within a specific economic cycle. MITI proposed the project in 1987 at the height of Japanese private sector investment in Australia. By 1992 the recession had begun to strongly curtail Japanese interest in expensive experimental cities on the Gold Coast let alone in a swamp outside of Adelaide. However some important factors were clearly within government control and must be acknowledged and dealt with for the future. It appears from interviews conducted since 1988 that in fact Japanese interest in the MFP had declined long before the financial tide had turned. The Australian government did not effectively deal with the situation because they did not adequately understand the inherent limitations of MITI's bargaining position and the nature of its incubator package. For these and other reasons it is illuminating to consider the factors operating in the shaping of the three main incubator models: MITI's fifth sphere city, DITAC's national network and SA's MFP-Adelaide.

MITI'S FIFTH SPHERE CITY

MITI's aim was to produce a project for consideration by Australia which would

fulfil the imperatives of its portfolio while furthering its ambitions. A limitation on MITI's choice of project form was the need for it to be acceptable to DITAC, the involved Japanese private sector organisation, the JDC, and the Japanese government. The resolution that MITI reached between their ambitions and the limitations placed on these ambitions was embodied in their 1987 fifth sphere incubator city model, and which drew upon their past experience in incubator design and ideas about appropriate management of the innovation process.

MITI's MFP offer was an expression of their new self appointed role as an international entrepreneur acting for Japanese business interests. By the 1980s MITI, whose original brief had been to facilitate postwar restructuring and act as a protector of Japanese industry within the context of the global economy, had now to identify a new role for itself and new ways of asserting its position. From the mid-1980s onwards, MITI sought ways of retaining its importance to the national government, maintaining power against the other ministries and staying on good terms with the Japanese private sector. MITI had lost its ability to act as a director of Japanese business activities and had taken up the position of an entrepreneur, setting up deals which captured attention and resources and furthered its ambitions. MITI's 1987 offer of the MFP was one such entrepreneurial project.

MITI had previously used incubator packages as an entrepreneurial opportunity on a number of occasions. One such project, the Technopolis Program, was in fact a cornerstone of MITI's strategies within Japan. As well as attempting to reassert their power in home territory through the compilation of incubator development packages, in the 1980s MITI began to reshape their official role as a mediator between Japanese industry and the international community. In light of the rise in international protectionism and trade tensions in the 1980s and to the ire of the Ministry for Foreign Affairs, MITI remodelled themselves as a special industrial ambassador for Japan. This new role suited MITI's desire to escape the restriction of operating solely in Japan and extended their portfolio range. Overseas MITI was still seen as very powerful and hence could do deals based on their potential ability to influence Japanese investment.[48]

Their new role abroad would also enable MITI to follow Japan's major companies off shore. MITI needed to maintain strong links with their constituency of Japanese TNCs and to create opportunities for smaller Japanese companies left at home. In the 1980s the Japanese private sector had surplus investment capital and MITI could see a role for itself in facilitating this expenditure. Acting in its entrepreneurial role MITI created several business packages for Japanese companies and offered them to different international governments, including Australia.[49] For MITI the MFP project was another venue in which they could act as entrepreneurs bringing together the Japanese private sector and the Australian government for a business venture which ostensibly suited the aims of the Japanese government. Through the MFP, MITI would give itself a permanent off-shore platform in Australia, extend its sphere of operations and solidify its new international role.

MITI was constrained by two main factors in their construction of the MFP package. Firstly they had to rationalise the project to the Japanese and Australian Governments. The second and most difficult consideration was how to convince the

Japanese private sector and the Australian government to pay for the development of the project. MITI did not propose to fund the MFP itself and in fact could not do so.[50] In the MFP offer MITI was creating an environment which it hoped would induce others to pay for the project. As in the past, an incubator package was chosen for development. MITI drew on a number of sources in producing its 1987 MFP incubator model, these were: a specific construction of the Japanese national 'innovation problem'; certain theories on the social engineering of creativity; and their own past experience with incubator developments in Japan.

In the 1980s a variety of methods were suggested as potential solutions to what was seen as the Japanese innovation problem. It was generally accepted in innovation management circles that Japan had an excellent record in using efficient technology transfer mechanisms, introducing innovative process methods and producing successful cumulative changes. The 'problem' was perceived to be a national deficiency in the ability to produce the more risky R&D breakthroughs which led to major leaps in product or process development.[51] Japanese innovation policy directions became guided by the need to compromise between the continuance of a specific R&D system with proven worth, and attempts to find new ways of stimulating breakthrough technology. Two main directions emerged, both of which attempted to combine Japanese strengths with remedies for their perceived weaknesses. These directions were the use of a special innovation management technique known as 'fusion' and the exploration of new ways of fostering human resources.

Technology fusion can be defined as the creation of hybrid product areas from the combination of formerly distinct industries or disciplines. A famous example of technology fusion attempted in the 1980s was the application of biological research on organic material to the production of new computer ware. Whereas Japanese use of TQM, product refinement and spiral development had suited the production of relatively low risk, incremental change, fusion techniques potentially offered the creation of radical new products.[52] Fusion techniques were seen as constituting an intermediate step between incremental and radical innovation systems and provided a way for Japan to stimulate creative activity without abandoning their research strengths of team-work and extensive long term planning.[53] The fusion technique was used extensively in MITI's description of the innovation mechanism at the heart of their fifth sphere city. Overlaps between industries and disciplines were focused upon as a major source of creativity for producing industries of the twenty-first century. A similar concept, that of synergy between industries, was also presented by MITI as a major innovative force in their incubator model.

Another strategy which has been relevant to MITI's MFP model and has been considered of major importance to Japanese government and business innovation management since the 1980s, is the formulation of new methods of cultivating human resources. In the post war era a distinctive feature of the Japanese innovation system had been their successful use of human resource management techniques like TQM to create cumulative product and process refinements. However in their drive to service the demands of a sophisticated international market and to produce creative 'breakthroughs', both the Japanese government and business sec-

tor have been considering new ways to 'update' their 'human resources'.[54] As part of the debate several theorists have put forward ideas on ways of 'engineering' increased levels of creativity in Japanese society, some of which have been very influential in shaping MITI's 1987 MFP incubator model.[55]

The application of social engineering techniques to designing a special innovative environment has been discussed by Japanese theorists since the 1970s. Major figures include the following, all of whom have been advisers either to MITI or other government bodies: Masuda Yoneji, an information systems expert; Kurokawa Kisho, Japan's leading avant garde architect and Kumata Yoshinobu, an internationally renowned expert on urban planning.[56] These three figures, and in particular Kumata, who took part in the MFP feasibility study, represent contemporary Japanese discussion on creativity and urban settlements. They, together with one other theorist, provide the external conceptual resources from which MITI drew when formulating their model of the MFP. The final theorist used by MITI was C. A. Doxiadis. a Greek architect, who was a major influence in the formation of their fifth sphere city plan.[57] Taken together these theorists emphasised the necessity of an integrated international city serviced by IT which enriched the lives of the residents both at work and play making them more innovative people.

In addition to the Japanese innovation management debate and the influence of certain social engineering theorists, MITI's 1987 MFP model had been influenced by their own previous experience in developing incubator projects within Japan. The design and use of incubators had become relatively common in Japan since the building of Tsukuba Science City in the late 1960s. MITI in particular had a history of using highly interventionist strategies and had extensively promoted the use of incubator developments in fulfilling the obligations of its portfolio.[58] MITI's grand vision of the MFP was certainly not out of character.

MITI had learnt some lessons in the course of running the Technopolis Program, so while their MFP plan retained some similarities with the Program it also contained major differences. The similarities were that both kinds of incubators contained industrial, academic, and residential elements and that responsibility for provision of high technology infrastructure and services and indeed for the ultimate success of the project was placed on the local participants not MITI. However in contrast the MFP was projected as a completely new residential city which would provide an attractive and stimulating lifestyle for residents. Extensive criticisms had been made of the unattractive and alienating environments found in Tsukuba Science City and the Technopolis Program. MITI portrayed its MFP as overcoming these problems.

A central concern of MITI in constructing the MFP was to create a package which would gain involvement from the Japanese private sector and at the same time persuade Australia to take part. The difficulty was that even though the Japanese private sector was flush with investment surplus in 1987 most Japanese company interest in Australia was in resort development and land acquisition. However MITI knew that a resort development would not have been sufficient to gain Australian government interest, because in 1986 MITI had offered the Silver Columbia Scheme and ELSA to the Australian Government and had been rebuffed. With this

limitation in mind MITI discussed the project in detail in 1986 and 1987 with a large number of Japanese companies, asking them to propose appropriate areas of development. Despite this attempt at consultation MITI had major problems in gaining the interest of a variety of firms outside of resort, construction and financial service areas.

In the end MITI's proposal offered the following investment opportunities: construction and infrastructure development, resort and conferencing, adult education and company retraining, and a variety of diversification possibilities in high technology. These investment opportunities thus identified were then bound tightly together into a special incubator city. MITI's fifth sphere city model made the involvement of certain industries imperative. It required special construction, infrastructure and service industries in order to function as an incubator in the way that they planned.[59] High technology industries that did not directly service the building and functioning of the city were more negotiable. MITI's fifth sphere incubator city appealed to the interests of the JDC by presenting them with investment opportunities in a government-subsidised city, set in the booming tourist destination of Australia.

MITI's MFP was shaped by the need to capture the interest of the Japanese private sector and the Australian government, and the necessity of rationalising the whole project to the Japanese government. MITI targeted particular investment opportunities popular with the JDC, bound them tightly together into a city package, aroused interest from DITAC by calling it an incubator city and claimed that it would address a variety of issues given priority by the Japanese government. However it must be emphasised that even though MITI was attempting to formulate an attractive business package, they were also presenting a serious incubator model. MITI's 1987 model was both a logical outgrowth of their previous developments in Japan and in line with current Japanese innovation management theories. But while MITI's MFP incubator was both a business package and a serious incubator model, the catch was that if Australia wanted Japanese partnership they would have to be prepared to pay dearly for it.

DITAC'S NATIONAL NETWORK

DITAC like MITI produced a particular model of the MFP which was shaped by their private aims, the constraints of working within the negotiation process and their views on the appropriate form of incubators as innovation management tools. The resolution of these factors for DITAC was their national network model. However a major contrast in the formulation of the two national positions was that while MITI presented a full, though utopian model, DITAC was merely responding with a compromise position. DITAC's model certainly represented its private aims and views on the incubation process, but it was also intended to frame negotiations between MITI, the JDC and the State governments.

In 1987 DITAC was in the process of attempting to formulate policy instruments which would facilitate the achievement of three main goals. These goals were the implementation of industrial restructuring, the refiguring of Japan's investment

profile in order to facilitate restructuring, and the solution of what they perceived to be Australia's national innovation problem. MITI's proposal shrewdly addressed each of these concerns and encouraged DITAC to view the MFP as the answer to their problems. DITAC, while maintaining a high degree of scepticism, agreed to take part in negotiations on this basis, but they were particularly attracted by the prospect of developing a bilateral high technology incubator.

DITAC's project objectives were limited by the necessity of dealing with a volatile set of negotiating partners. DITAC had to respond in such a way as to safeguard what they perceived as Australia's interests and yet maintain Japanese participation. At the same time they wanted to control the actions of the States and prevent them from agreeing to a private deal with MITI or the JDC. DITAC was also very concerned with how best to manage the Australian public's reaction to the project, as there were many aspects of MITI's offer which could cause major controversy.[60]

MITI's fifth sphere model was a minefield of problems for DITAC. It was a very expensive, very risky plan which would not show any results other than heavy development costs for many years. And DITAC was well aware that MITI had refrained from discussing how this long term financial burden was going to be managed and by whom. Also if the Australian government agreed to MITI's city plan, they would then be locked into an enormous project which would be very difficult to control. DITAC was suspicious that the MFP might be just a reworking of ELSA and the Silver Columbia Scheme. They were also concerned about Australian public reactions to a 'Japanese city' and the social engineering theories deeply embedded in MITI's model.

DITAC was seriously interested in a joint incubator but from quite early on were questioning MITI's intentions in recommending their 1987 model. The Australian incubator experience seemed to present DITAC with quite a different version of what an incubator should be and do. The State governments had been experimenting with incubator developments since the early 1980s and the new Victorian Technology Precinct Program, which entailed the development of several zone incubators, seemed to be very promising.[61] DITAC in actively seeking an alternative to MITI's fifth sphere city, began to draw upon their own solutions to what they saw as Australia's innovation problem and existing Australian and overseas incubator models.

In the 1980s Australia's innovation problem tended to be reduced in government reports to an overall inability to produce commercially successful innovations. In contrast to what was generally presented as Japan's problem with breakthrough creativity, Australia was seen as having an abundance of creativity but little ability in pushing novel ideas through into successful products. In the late 1980s various levels of government including DITAC, began investigating the use of incubator developments as a way of providing what was perceived as the missing commercialisation stage in a some what linear view of the Australian innovation system.

Incubator developments had begun to proliferate in Australia under the aegis of different State governments since the early 1980s. Role models for these developments had tended to come from two main places - the USA and the UK. Though

Silicon Valley appears to have been influential as a major success story, in terms of actual design style the UK example proved to be more popular. This preference for the British science park model in Australia came about for several reasons. In Australia the public sector was the major R&D performer and in line with the economic rationalism of the 1980s, it was decided that they should contribute more strongly to industrial development. At the same time it was generally believed that the Australian private sector lacked any serious interest in performing and using R&D. Hence, following the UK science park example, State governments were attempting to use the highly regarded universities as a bait to lure the business sector into performing and investing in R&D.[62]

The MFP models produced by MITI and DITAC reflect not only their respective negotiation goals but also their very different views on the appropriate way of modelling and solving their respective national innovation problems. DITAC's national network was intended to import what was perceived to be the missing part of Australia's national innovation system through the formation of a new kind of partnership with Japan. DITAC saw Australia as strong in 'breakthrough' R&D but weak in post invention stages. DITAC believed Japan and Australia were complementary in their problems and so they focused on an incubator model which they believed would allow each side to fill in the missing element in their innovation system. DITAC, unlike MITI, did not have a solid tradition in fostering non-academic human resources as a major part of their innovation management techniques, hence their incubator attempted to offer solutions to their respective national innovation problems by merely creating new linkages in a network.

For MITI the concept of incubator cities which sought to provide a special environment to stimulate creativity had been an acceptable idea since the 1960s. As the Japanese have long respected the importance of human resources in industrial success, the social engineering of a creative work force was deemed a logical step.[63] Despite DITAC's scepticism, MITI's social engineering strategies were indeed aimed at producing a commercially successful outcome. For example among other things MITI's city would function as a microcosm in which new products could be designed and tested using an international audience. DITAC was not interested in market responsiveness, a quality highly valued by the Japanese in the completion of the commercialisation process. For Australia, quite another form of incubator was seen as appropriate.

DITAC countered MITI's city model with an integrated network of R&D sites. However in order to retain Japanese interest they agreed that this network could be connected to a central hub which might be a city-style development. DITAC proposed the network model as a way of safeguarding their negotiation aims. DITAC's network could be used to spread the MFP investments across the nation and enable them to retain central control of the project. It did not necessarily have the same infrastructural costs as MITI's luxurious city and a network would prevent, to a certain extent, a public backlash against a Japanese technocratic enclave. But most importantly DITAC sought different qualities in an incubator. The city plan seemed inappropriate and was not deemed cost effective. The network model reflected DITAC assumptions about the appropriate form of incubators and their function in

managing innovation. DITAC essentially dismissed MITI's desire for a experiment in urban living and their extensive social engineering strategies as peripheral to a serious incubator model. DITAC also wanted to down play the resort emphasis that MITI had so carefully detailed, in order to prevent the MFP from turning into a government subsidised tourist town.

SOUTH AUSTRALIA'S INFORMATION CITY

The model produced by the South Australian government was strongly affected by MITI's 1987 proposal and DITAC's requirements. Like MITI, SA produced a full model, but as in the case of DITAC their position was in essence a reaction to MITI's initial plan rather than a freely drawn vision of their ideal incubator model.

All in all the 'opportunity' of the MFP arrived at a difficult time in the history of the Bannon government and created a negotiation space in which solutions to many of the State's grave problems could be worked out. It was an opportunity to acquire funds from external government and private sector sources to fund industrial restructuring, urban renewal programs and in particular to update Adelaide's information technology infrastructure. As many of SA's economic woes were perceived to stem from their geographic isolation, IT was seen as a possible cure for their problems. SA's information city model was a reworking of solutions to the State's many problems into an attractive but highly expensive incubator design.[64] At the same time SA had to produce a proposal which would be acceptable to officials conducting the 1990 feasibility study, approved by DITAC who had their own MFP agenda, favourably received by MITI and attract JDC investment. And finally, it had to be accepted by the Adelaide community at large.

DITAC certainly did not make SA's job very easy as they basically wanted a national network rather than a city and tried to maintain control of the project. DITAC had agreed to make Adelaide a hub site but expected the SA government to produce a plan which made them just an attractive centre node in a national system of MFP sites. At the same time DITAC expected SA to produce a plan that would attract private sector investment, especially from Japan. Despite these requirements DITAC insisted that they would not contribute enormous funding to the project, and that SA had to find a way to fund it themselves. The majority of funds contributed from the Commonwealth Government to the MFP project, even after the 1990 decision to use Adelaide, were controlled by DITAC not SA. So SA had to deal with high expectations but little support from DITAC.

At the same time MITI and the JDC were not impressed by the elimination of their favoured site on the Queensland coast and forcefully expressed their displeasure. MITI would not back down from their fifth sphere city vision and wanted an attractive site, substantial infrastructure development and generous financial incentives which would enrol the JDC participation. The active JDC companies meanwhile highlighted their preferences for a leisure oriented site and complained of lack of incentive to invest.

While their partners in the project were expressing their own requirements, Bannon had to contend with a local community that was responding in a variety of ways to

the project. Negative reactions expressed tended to question Bannon's ability to make the MFP financially viable, as well as the effects the MFP would have on the community, especially in terms of a major influx in transient Japanese 'technocrats', and the environmental consequences of such a development. SA's formulation of the MFP-Adelaide model was an attempt to resolve these various pressures into an incubator model which would still further State development goals.

The MFP project was not the first time that Bannon had used an incubator strategy to pursue regional development. In the 1980s stimulation of high technology industry became a part of competition between the States in bidding for industry location, along with government funding and contracts. The States had used incubators to bring together academic and private sector partners in small science or technology parks. In SA the Technology Development Corporation was established in 1982 to manage Technology Park Adelaide (TPA) and Science Park Adelaide (SPA). These park developments were created specifically to provide support for the commercialisation of R&D from Adelaide's universities and research centres. TPA was in fact the first State government park in Australia and has generally been judged as Australia's most successful.[65] MFP-Adelaide in essence became a combination of these original incubator developments and a grander IT vision. SA's information city model was based on an IT network which connected TPA, SPA, and various SA universities. Overlying this was another IT network which linked the Gillman core site to Adelaide and thence to the rest of Australia and the world. MFP-Adelaide was thus another stage in the SA government's plans for using incubator developments and IT in stimulating state development.

MFP-Adelaide was to be an attractively planned information city focusing on education and environmental management, which to a large extent reconciled the difficulties of the SA government's negotiating position. The emphasis on IT infrastructure suited the development plans of the SA government and DITAC who wanted a national IT network, and was also congruent with MITI's 'city of advanced infrastructure'. The choice of education and environmental management would please many concerned community groups, be consistent with previous South Australian incubator developments and again fit in with MITI's fifth sphere city vision. Environmental management, of course, was necessary for the successful development of the main MFP site at Gillman, which was a toxic waste dump. The SA government, in a spirit no doubt similar to MITI's, presented the clean up of the Gillman site as an on site incubation opportunity for the environmental management industry. Fortuitously it also got rid of an expensive headache for SA. In essence the SA government was offering MITI and the JDC the space to provide their own fifth sphere information city.

CONCLUSION

Both Bannon and DITAC have been castigated by many commentators for missing a unique opportunity. The following kind of criticism has not been uncommon: '[f]rom its very inception it has called for a creative and visionary response from the South Australian government...Bannon and his Ministers were frozen into immobility, seemingly incapable of responding imaginatively to the proposal and

politically afraid of going out to sell the idea to the public.'[66] However a deeper analysis needs to be made of this 'unique' opportunity and the lessons that can be learnt.

In MFP-Adelaide MITI had essentially received the land to build the fifth sphere, experimental city they had requested. However MITI's fifth sphere city was primarily a vehicle to create space for deals between Australia and the JDC. MFP-Adelaide caused serious problems for MITI as they were relying upon Australia's ability to mobilise JDC investment for the project to proceed. The SA model lacked the necessary ingredients to perform this function, that is, an attractive, fully developed, subsidised, site with good resort potential and accompanied by financial incentives.

Incentives and a ready site provided by Australia were essential to Japanese participation. MITI had never intended to subsidise the building of the MFP, they were merely offering Australia an opportunity to do business with the JDC. This attitude was obvious from the start and constantly repeated by the Japanese side in their demand for incentives and a more attractive offer.[67] The Gillman toxic waste dump in Adelaide certainly did not have the same appeal as prime Queensland coastline and once the JDC rejected MFP-Adelaide there was little MITI could do. MITI and the JDC saw the failure of the MFP negotiations as mainly due to DITAC's unrealistic expectations, SA's attempt to blend their development aims with MFP requirements, and the total lack of any attempt to understand the Japanese position. All in all the MFP negotiations have been marked by an inability of the various participants to overcome their massive differences in negotiation aims and views on the appropriate form for incubators.

It must be strongly emphasised at this point in the analysis that no matter what site had been offered or what incentives provided, the effect of the 1990s recession on Japanese surplus funds would have most likely prevented the very costly development of the MFP from proceeding quickly to completion. Even if DITAC had agreed to establish MITI's fifth sphere city in Queensland, Australia could well have been left with an expensive white elephant. The price paid for Japanese participation would have been costly and development activity probably short lived.

Given that the 'stalling' of the negotiations may have been fortuitous, two important lessons remain to be learnt. Firstly a far deeper knowledge is required by the Australian government of our largest trading partner and the workings of their government apparatus. The misunderstandings which have characterised the MFP negotiations remain a costly example of our parochialism. Participants in MFP negotiations interviewed from both the Japanese and Australian teams complained bitterly that the other side could not or would not understand their position. Such bilateral projects are too important to remain 'untranslated' and efforts must be made by the Australian government in future to ensure that the complexities of Japanese government policy making are not unfamiliar to our representatives.

Secondly the production of Australian national innovation policy and hence future incubator design needs to be guided by a less traditional, linear view of the innovation process. At the moment it is generally held that the academic sector produces (or should produce) R&D which can be commercialised by industry, thus

rationalising public expenditure and externally providing the research which hopefully will invigorate the Australian industrial restructuring process. There are major problems with this simplistic model of the innovation process and the Australian government would profit from serious consideration of other kinds of models such as national innovation system theory, though this also has its drawbacks.[68] While certainly not suggesting that the Australian Government follow Japanese social engineering strategies it is clear that human resource management should be a key issue under their consideration. In these times when economic rationalism holds full sway, and public sector funding is under attack it seems very easy to dismiss those 'functions' which do not seem to have a direct association with a profit margin. While it is not within the scope of the present paper to examine possible options in detail, the Australia Government would be well advised to note that, as the Japanese have proved so well, a nation's greatest resource is its people.[69]

NOTES AND REFERENCES

1. This paper has been taken from my doctoral thesis which drew upon a year spent in Japan in 1990-91. Material was gathered from relevant interviews in both Japanese and English, archival research and special site inspections. The visit was in part made possible through DEET's National Asian Languages Scholarship and Asian Studies Postgraduate Scholarship Scheme.
2. MITI, *A Multifunctionpolis Scheme for the 21st Century: basic concept*, MITI, Tokyo, 1987, pp. 4, 5.
3. *Ibid.*, p.1. Senator John Button was Minister of DITAC throughout the 1980s and in 1987 became the leader of the Australian side in MFP negotiations. The quote was taken from a speech by John Button at the Multifunction Polis Forum, Melbourne, 22 July 1988 reproduced in *MFP Perspectives*, a compendium of material on the MFP produced by DITAC in 1988, p.2.
4. This has been noted by many commentators including D. Edgington in 'Japanese manufacturing investment in Australia: corporations, governments and bargaining, *Pacific Affairs*, Spring 1991, *64*(1), pp.65-84.
5. W. Hamilton, *Serendipity City: Australia, Japan and the Multifunction Polis*, ABC, Sydney, 1991, p.11.
6. S. Minagawa, 'Institutionalisation of economic relations with Japan: a case study of Japanese direct investment in Australia and the Multifunction Polis idea', *Occasional Papers*, Nanzan University Centre for Australian Studies, Nagoya, Japan, January 1990, p.24.
7. The MFP meant many things to many people including an opportunity for building Australian government subsidised golf courses; however, there is no doubt that the MFP was both presented and accepted as a new type of high technology incubator.
8. Porter warned in 1985 that '[t]echnological change is one of the principal drivers of competition'. M. Porter, *Competitive Advantage: creating and sustaining superior performance*, The Free Press, New York, 1985, p.164.
9. In the incubator design discourse such developments have been referred to by a variety of appellations including: development block; industry cluster; information city; technopolis; milieu; and science park. In spite of debate over appropriate form all terms fundamentally denote special environments in which the stages of the innovation process are said to be both accelerated and controlled. This variety in terms is the result of a heated debate over the appropriate form of such 'special environments' and hence they have been named and defined in a wide variety of ways. In an attempt to move beyond this debate the less commonly used term 'incubator' has been chosen.
10. One series of studies estimated that by 1991 there were 562 incubator developments spread throughout Europe, North America, and the Asia Pacific region. D. Fusi, 'Major new sites for science continue

to spring up around the World', *Site Selection and Industrial Development*, 1991, *36*, p.614. D. Fusi, 'Science parks pave the way for corporate high-tech locations', *Site Selection and Industrial Development*, 1990, *35*, pp. 656-8.

11. Size is an important basic dimension in classification as the participant population can range from a research centre team to a science city of many thousands of workers and their families. Consideration of on-site functions is important as inclusion of features such as residential facilities may be a major factor in imparting form and nature to the incubator.
12. It must be noted however that unlike most Western style science parks the Japanese 'park' usually does not closely involve a university R&D centre but focuses mainly on collaboration between businesses. Hence Japanese 'parks' tend to be more like an industrial rather than a science park.
13. Whether incubators actually perform this function or serve other more complex purposes is another question. Here I am concerned with the reason for their increased popularity - the 'promise' of innovation.
14. There were two editions. Modification was required because the first edition contained a number of proposals such as toxic waste processing and rocket launching facilities that were deemed too controversial by the Australian government.
15. For example it was proposed that all 'MFP residents would undergo medical examinations at the medical center and computerised records would be kept of their medical history and state of health.' MITI, 1987 op cit, p.42. These records would then be open to analyse for commercial purposes.
16. In the course of the 1988-1990 official feasibility study a host of consultancies were commissioned by a variety of sectors of the Australian Government to contribute to the mid 1990 decision on the future of the MFP and its potential form and location. Of these the major reports produced were: D. Yencken *et al.*, *Social Issues Study Multifunction Polis: Final Report*, DITAC, Canberra, May, 1989, on the potential social effect on Australia; Arthur Andersen/Kinhill Consortium, *Multifunction Polis Joint Feasibility Study: Consultancy Final Report*, Arthur Andersen/Kinhill Consortium, [Sydney], December, 1989, on appropriate form; The National Institute of Economic and Industry Research (NIEIR) study, contained within the Andersen/Kinhill Report, which examined economic implications; The Bureau of Industry Economics (BIE), *Economic Evaluation of The Multifunction Polis*, DITAC, Canberra, 1990, also examined economic implications; and National Capital Planning Authority (NCPA), *MFP: An Urban Development Concept*, AGPS, Canberra, July, 1990, which discussed town planning strategies. The findings of these consultancies contributed in varying capacities to: shaping the States' May 1990 presentations; effecting public perceptions and community responses; influencing the political situation; setting the Joint Steering Committee's decision making agenda; and effecting Japan Domestic Committee and MITI relations with DITAC.
17. At the end of the first feasibility study all of these special bodies were disbanded except for the JDC who changed the name of their organisation but continued to be officially involved in investment negotiations.
18. The working groups were attended by members of the JDC with a preponderance interested in particular areas. In 1989 the urban infrastructure working group had thirty six members, international exchange and resort thirty two, industry and technology twenty two, finance thirteen, regulation seven, and education and training five.
19. They eventually identified four main areas: education; health; media; and information technology.
20. Originally the consortium partners divided up the MFP consultancy work as follows: Arthur Andersen was to deal with commercial aspects, concept development and international marketing, and Kinhill, to deal with spatial attributes and site selection. However as the feasibility study progressed dissatisfaction with the consortium's output became apparent. Attempts were made to force the consortium to meet the expectations of their employers. In April, 1989 the Joint Steering Committee met to 'provide greater focus for the feasibility study by clarifying both governments' principle expectations for MFP.' However little change occurred. Multifunction Polis-Joint Steering Committee, *Project Background: Multifunction Polis feasibility study*, 1990, [Multifunction Polis-Joint Steering Committee, Sydney], 1990, pp.17, 90.
21. DITAC commissioned studies by David Yencken, the National Planning Authority, and the Bureau of Industry Economics. The Joint Secretariat employed the following consultants for various work: Conran Roche Planning UK, Bechtel Corporation US, NIEIR as well as various other individuals.

22. I. Inkster, *The Clever City: Japan, Australia and the Multifunction Polis*, Sydney University Press, Sydney, 1991, p.50.
23. A hub was defined as the central site proposed for the location of the MFP. A spoke was a site proposed to be linked in some way to the main hub.
24. Inkster, 1991, *op. cit.*, p.51.
25. Six of the seven Japanese committee members found reasons for not coming to the Melbourne meeting.
26. They were held in March 1990. In early March Liberal Party Opposition Leader Andrew Peacock made a speech denouncing the MFP and bringing it into the political limelight. He was not supported however by his party and Liberal power brokers such as John Howard, Nick Greiner and John Elliott rejected his stand. Labor Party Prime Minister Bob Hawke countered the criticism of DITAC's handling of the affair by accusing Peacock of racism.
27. Arthur Andersen/Kinhill Consortium, *Multifunction Polis Joint Feasibility Study: Consultancy Final Report*, Arthur Andersen/Kinhill Consortium, [Sydney], December, 1989a; Arthur Andersen/Kinhill Consortium, *Multifunction Polis Joint Feasibility Study: Project Development Report*, Arthur Andersen/Kinhill Consortium, [Sydney], November, 1989b.
28. A number of MFP media 'discussions' ensued. Prime examples were a special edition of the 7.30 Report, ABC, 28 February, 1990, and 'Japocalypse', Couchman Report, ABC 28 February 1990.
29. The Bureau of Industry Economics (BIE) report was commissioned in February 1990, by DITAC. It was intended to function as a counter to the findings of NIEIR which had indicated that the MFP had to have 60-80% foreign population to be economically viable. It was published in July 1990 just as the final MFP report was being considered by the Australian and Japanese governments. BIE sought a way of using the MFP for Australia's benefit but without extensive foreign control, The report assumed the MFP was a physical place not just interconnected activities, a real city not unlike other Australian cities. The base scenario was a population of 100,000 in a city constructed over fifteen years from the early 1990's. Total investment was estimated to be $13.5 billion or $900 million/year Australian. Unlike NIEIR, BIE stated the MFP was viable with a foreign population of no more than 25%. The report warned that the MFP must make efficient use of resources in Australia rather than add to them and that there was a need to be careful in linking MFP produced innovations to the rest of the economy. The Bureau of Industry Economics (BIE), *Economic Evaluation of The Multifunction Polis*, DITAC, Canberra, 1990.
30. DITAC, *The Multifunction Polis Proposal: One Australian Perspective*, DITAC, Canberra, 1988.
31. Premier's Department, Queensland, 'The Multifunction Polis of the 21st Century - a Queensland View', February 1988, as noted in DITAC, ibid., p.7.
32. DITAC chose the international examples of Silicon Valley and Route 128 as their ideal development models, both a far cry from MITI's utopian resort city.
33. DITAC's desire for a network of site has been corroborated in numerous interviews with negotiation participants. in their clashes with MFP-Adelaide over development strategies after June 1990 and in their direction of MFP-Australia Development Corporation from 1991 onwards. DITAC pursued its own network model virtually abandoning MFP-Adelaide after August 1991.
34. South Australian State Government, *Adelaide: a submission to the MFP Joint Secretariat by the South Australian Government*, South Australian State Government, Adelaide, May, 1990; Committee for Melbourne, *Melbourne Docklands*, Victorian State Government, Melbourne, May, 1990; The Future North Queensland Syndicate, *The North Queensland Multifunction Polis (NQMFP)*, The Future North Queensland Syndicate, [Brisbane], 15 May 1990; New South Wales State Government, *Sydney, Hub of the Australian Multifunction Polis: NSW Government final proposal for the Joint Feasibility Study*, New South Wales State Government, Sydney, May, 1990; Queensland State Government, *Queensland Multifunction Polis: The Natural Choice*, Queensland State Government, Brisbane, May 1990a; Queensland State Government, *Queensland Multifunction Polis: The Natural Choice*, Queensland Submission Part B, Commercial Opportunities, Queensland State Government, Brisbane, May, 1990b.
35. SA State Government, *Adelaide: the nominated site for the Multi Function Polis (MFP)*, [SA State Government, Adelaide], 1990, p.3.2.
36. P. Ward, 'Industry boost as $839M future city gets go-ahead', *The Australian*, 1 August 1991, pp.1,4.

37. A major feature of the SA model of the incubation process was its attention to issues mentioned in incubator design literature. Adelaide Technology Park (ATP) situated near Gillman had long been seen as Australia's most successful and was presented with a flourish as an example of SA's ability to manage incubators.
38. R. Sproull, 'Name change needed to boost MFP image', *The Australian,* 5 September 1991, p.4.
39. R. Sullivan, 'Japanese tour MFP to decide on funding', *The Australian*, 2 December 1991, p.5.
40. Japanese interest in Queensland real estate had not entirely diminished despite the recession. R. Eccleston, '$1bn Japanese spree on Gold Coast property', The Australian, 25 January 1992, p.7.
41. R. Skelton, 'Koreans keen to go for MFP', *Weekend Australian*, 7 December 1991, p.3. S. Wilson, 'City plan 'chance to lead world'', *The Australian*, 25 January 1992, p.7.
42. R. Skelton, 1991, *op. cit.*. Quoted in B. Donaghy, 'Drawing the lines for SA's MFP Multiversity', *Australian Campus Review Weekly*, 9-15 July 1992, pp.12,15.
43. P. Hartcher, 'Keating to resuscitate ailing MFP', *Sydney Morning Herald*, 24 February 1992, p.1.
44. J. Della-Giacomo and K. Glascott, 'MFP Bannon's bid to win poll', *The Australian*, 2 March 1992, p.2.
45. Hanya Tetsuo, in MFP Research Committee, *Investment Environment Survey Mission*, translated and printed by DITAC, 1992, p.11. Deputy Tamaoki, *ibid.*, p.119.
46. MITI has sought since 1992 to back out however they have encountered strong opposition from the Australian government. MITI officially continues its interest but in name only for the present. This is not to say that it may not suit them at some future moment to pick up the ball again.
47. The new appointment of Dr Laurie Hammond as the new chief executive of the MFP, was announced in July 1996. J.Rowbotham, 'The fixer: can this man make the MFP work?'*The Australian*, 31st July, p.9.
48. MITI, in their role as industrial ambassador, developed a series of special international projects such as the International Flexible Manufacturing Research Program and has created a new international role for JETRO.
49. The most relevant predecessors to the MFP, were the Silver Columbia Scheme and ELSA, each of which proposed to send large numbers of Japanese abroad for permanent or extended periods of residence.
50. As Watanabe Chihiro explained 'MITI's financial budget is relatively small...and its legal authority is less than powerful. In this connection, MITI makes free use of what we can call the "soft" technologies of public administration, which are presented by a future-oriented way of thinking and consensus-based process of policy making. 'C. Watanabe and Y. Honda, Japanese Industrial Science and Technology in 1990s: MITI's role at a turning point, New Energy Development Organisation, MITI, Tokyo, [1991],p.17.
51. The stimulation of creativity became the subject of many CST, STA, Monbusho and MITI reports and the STA itself was reformed in the 1980s as part of the national government's response. J. Sigurdson and A. Andersen, *Science and Technology in Japan*, Longman, London, 1991, p.56.
52. S. Tatsuno, *Created in Japan: from imitators to world-class innovators*, Harper and Row, New York, 1989.
53. In 1986 MITI's influential Industrial Structure Council proposed that the 'creative blending of technologies' or technology fusion held the answers for problems in Japan's industrial structure. Otsuka Kazuhiko, Director of MITI's Industrial Structure Division until the end of 1986 proclaimed technology fusion as Japan's main tool for industrial restructuring. ' K. Otsuka, 'Industrial restructuring through technological blending', in I. Miyake *et al.*, *Opinions on Japan's Economic Restructuring*, Foreign Press Centre Japan, Tokyo, 1987, p.43.
54. The debate is still continuing into the 1990s with regular comments made from Nishizawa and Nakatani in particular. See: J. Nishizawa, 'We need creativity', in S. Ichikawa et. al., *Science and Technology Research in Japan's Future*, Foreign Press Center Japan, Tokyo, 1990, pp.16-21; I. Nakatani, 'Nation's future lies in original thinking', *The Nikkei Weekly*, 27 September 1993, p.6.
55. While the term 'social engineering' tends to raise the hackles of many Westerners it is considered a reasonably honourable activity in Japan. Such an activity, in line with Confucian principles, shows foresight and emphasises the importance of 'appropriate' human behaviour. Both considerations

have long held importance in Japanese culture as marks of civilised behaviour and in Confucian terms distinguish the enlightened human being from the uneducated barbarian. Kumata Yoshinobu, one of the theorists discussed later is a Professor in the Department of Social Engineering at the Tokyo Institute of Technology.

56. See Y. Masuda, *The Information Society as Post-Industrial Society*, Institute for the Information Society, Tokyo, 1981; K. Kurokawa, 'Towards the Evocation of Meaning', *Japan Architect*, August 1989, 64, p.12.
57. See C. A. Doxiadis and J. Papaioannou, *Ecumenopolis: The Inevitable City of the Future*, W. W. Norton, New York, 1974.
58. An example of which was MITI's unpopular New Industrial Cities program run in the 1960s which attempted to relocate heavy industry to greenfield sites. See P. Rimmer, 'Putting Multi-function Polis into context: MITI's search for a place in the sun?', *Australian Planner*, June 1989, 27(2), pp.15-21. Again in the 1970's, after the announcement of National Land Agency priorities, MITI began combining innovation management goals with regional development aims resulting in the formulation of the Technopolis Program.
59. Not surprisingly the JDC's most active companies were in engineering and construction industries. In the 1980s Japan's main construction companies were big, wealthy, politically powerful, and seeking opportunities for overseas investment and diversification. MITI's special MFP city provided enormous opportunity for extensive use of Japanese advanced urban software infrastructure as well as acting as a test-bed for the production of incubator city prototypes for export elsewhere. Such prototypes would potentially have a market in those countries hoping to update their infrastructure and buy an 'intelligent' city. The MFP was an opportunity to produce a prototype and to do so using cheap land, energy, and a skilled labour supply and an attractive showcase location. SA knew that the MFP was a prototype for other such developments and stated this in their May, 1990 proposal. SA State Government, *Adelaide: a submission to the MFP* Joint Secretariat by the South Australian Government, SA State Government, Adelaide, May, 1990, pp.6,1.
60. DITAC had commissioned a major report into the potential social effects of the MFP known as the Social Issues Study and led by Professor D. Yencken. However as the feasibility study proceeded the publication of this report became a delicate matter. Though it was completed in 1989, its release to the public was delayed. The report was composed of two separate studies. The first study looked at the context of the MFP proposal and the issues associated with new towns and urban development. The second examined the social, cultural and environmental issues that might be involved in the successful integration of any MFP development into Australian society. The final composite report called for more public discussion and community consultation but was in essence positive on preceding with the MFP feasibility study.
61. This Precinct Program had been designed for the most part by Edward Blakely who later became a major figure in the Arthur Andersen/Kinhill consultancy.
62. This emphasis on the central importance of the university sector in incubator design was very different to Japanese incubators where the main R&D performer was the private sector.
63. This attitude to incubator design in Japanese government was not restricted to MITI. Satoshi Ohoka, Director of International planning for the Japan Development Bank warned that inattention to lifestyle qualities would raise major problems in the functioning of incubators: '... their success depends on whether they will actually help high-density human relations in a technological society or not. Hardware facilities are nothing more than basic requirements; what matters for research cores in the final analysis is the software.' S. Ohoka, 'The importance of Regional Core Centers: research and development-type town planning', *Business Japan*, September 1991, p.4.
64. This strategy had also been used by local governments in Japan who had been very active in obtaining funds from the large central government ministries under the aegis of particular schemes.
65. R. Joseph, 'The Silicon Valley Factor: Australia's Technology Parks', in P. Scott (ed.) *A Herd of White Elephants?: some big technology projects in Australia*, Hale and Iremonger, Sydney, 1992, p.78.
66. A. Patience, 'The Bannon decade: preparation for what ?', in A. Parkin, A. and A. Patience (eds.), *The Bannon Decade: the politics of restraint in South Australia*, Allen and Unwin, Sydney, 1992, p.349.

67. In the Investment Mission Report MITI recommended that Australia follow the financial establishment program of Kansai Science City which was funded by local government and business, not the national Japanese government. This was a telling piece of advice as development of Kansai Science City has stalled since 1992 due to lack of both interest from Japanese companies in relocating from Tokyo and available investment funds due to the recession.
68. See for example R. R. Nelson (ed.), *National innovation systems: a comparative analysis*, Oxford University Press, Oxford, 1993. In a forthcoming paper I will discuss innovation management theorists and national innovation systems models in particular. One criticism which will be noted is the lack of mechanisms which could provide public participation in decisions made regarding the management of technological change.
69. Tessa Morris-Suzuki convincingly argues that social networks of information played a far more important role in transforming Japan than 'far-sighted' government policy or the actions of large companies. See *The Technological transformation of Japan From the Seventeenth to the Twenty-first Century*, Cambridge University Press, Cambridge, 1994.