

**Dilemmas of Policy Innovation in the Public Sector:
A Case Study of the National Innovation Summit.**

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***Abstract:** Policy innovation is a significant challenge for the public sector. This article illustrates its magnitude through a case study of the National Innovation Summit. The paper concludes that the Summit represented an elaborate process of search and engagement that sanctioned an outcome that was, in most respects, largely pre-determined. Its outreach and deliberations served the political purpose of mobilising industry and media attention and communicating the government's commitment. But there is no evidence that it exercised any substantive influence on policy development. The obstacles confounding any other outcome are considerable. Strategic thinking is inhibited by various organisational factors including lock-in to a present successful strategy, the constraints on policy choices associated with multiple veto points and the need to maintain medium term fiscal and policy discipline across a wide range of agencies and claimants. The paper explores ways these inhibitions might be overcome.*

* We are grateful for comments and advice on earlier drafts from Glenn Withers, Alan J Jones, Evan Jones, Don Scott-Kemmiss and several anonymous sources.

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Policy innovation is an inherently problematic activity, but perhaps especially in public sector settings. The well-documented hazard of lock-in in large complex organisations is especially salient to a governmental policy system with its multiple interconnections and dispersed and divided authorities. Interdependence, on the one hand, between political and administrative structures and, on the other, between administrative organisations and agencies augments the potential for conflict. This can work perversely to suppress attention to issues or to constrain the range of solutions (March, 1999). The need to maintain medium term fiscal and policy discipline provides additional (positive) reasons for resisting unorthodox ideas.

Different kinds of policy innovation also present challenges of differing complexity. Hall (1993) suggests three broad categories: first, shifts in a policy frame or paradigm (e.g. monetarism, supply side economics); second, a shift in specific instruments (e.g. GST); and third a shift in settings (e.g. a tax rate). The first is of course the most exacting, but also the most significant. New paradigms can be associated with strategic challenges like water scarcity (Wentworth Group, 2003), global warming (Flannery, 2006), social policy (Esping-Andersen, 2002), funding strategies (Chapman, 2006), or, in the present case, innovation. Such synoptic challenges can also be expected to arise more frequently. A variety of factors, including complex interdependence, spillovers between outcomes, cost pressures, technological and social change, and globalisation are driving this outcome. Recognition and assessment of strategic challenges requires capabilities to scan environments, identify new features and evaluate their relevance. This exploratory activity needs to occur without jeopardising the effectiveness of current activity.

A case study of how effectively the Australian policy system responded to such challenges was provided by the evaluation of innovation strategies that took place in the period roughly from 1997-2001. Whilst there had been a history of engagement with the issue, stretching back to the late 1980s (surveyed in Marsh and Edwards, 2008), pressure from the major representative organisation of big business, the Business Council of Australia (BCA), initiated a fresh review in 1997. The review

process included a National Innovation Summit (in February 2000) and culminated in a new statement of government policy, *Backing Australia's Ability*, in January 2001. This broad approach was reaffirmed in a second major government statement *Backing Australia's Ability – Building our Future through Science and Innovation* (2005), which set forth a program for the ensuing seven years. Hence, but for the demise of the Howard government, the decisions made in the 1997-2001 period would have determined the broad approach to innovation for over a decade.

This paper asks two questions: first, how well did the Australian policy system cope with the task of evaluating a new policy paradigm? And second, what governance or organisational capacities are required to recognise, assess and, if necessary, adopt new policy paradigms or strategies? This paper is in two parts. The first section is descriptive. It outlines developments from the initiation of the Summit to the government's policy statement *Backing Australia's Ability*. The second section is evaluative. It explores the lessons from the perspective of the requirements for institutionalising strategic capabilities.

I. From Innovation Summit to Backing Australia's Ability.

In 1996, Labour lost office and John Howard was elected Prime Minister. In its early quest for expenditure reduction (and in response to suspected abuse), the Research and Development tax concession was reduced to 125%. An ex-business executive, David Mortimer, was also appointed to review the full range of industry programs. In his subsequent report, Mortimer strongly opposed sectoral programs. For example, he recommended abolition of the CRC program, reduction of the R and D tax concession to 100% and the introduction of a requirement for the CSIRO to attain 50% private funding.

In the subsequent statement, *Investing for Growth* (1997), the government cut a number of sectoral programs but maintained support for the commercialisation of new technologies. The Pooled Development Fund survived and was progressively complemented by the COMET (Commercialising Early-stage Technology) Program and an Innovation Investment Fund. An R&D Start program, which involved a tiered

grants scheme, was also introduced. These developments reflected the then current orthodoxy: namely, that the challenge of innovation was primarily one of moving ideas from the laboratory to commercialisation – a science-push view of the process.

Meantime, other official and non-official publications developed the case for a broader approach. For example, in 1996, the Industry Department published a collection exploring recent innovation theories, including the concept of a national innovation system (Bryant, 1996). In 1997, the Australian Business Foundation published a comprehensive report on economic strategy, *The High Road or the Low Road, Alternatives for Australia's Future* (www.abfoundation.com.au), which emphasised the promise of innovation based on a firm-centred approach. Meantime, in response to the reduction in the R and D tax concession, the Business Council of Australia (BCA) also launched a campaign for a reassessment of innovation strategies.

In its 1998 election manifesto, the government declared: 'A detailed stock take and evaluation of Australia's national system of innovation is required if we are to set the agenda for the future and develop policies to promote higher living standards'. Post-election, it agreed to join the BCA in hosting an Innovation Summit. The following sections describe its organisation and impact. The first discusses outreach and the mobilisation of interests. The second section identifies the three major narratives about innovation that were evident in Summit submissions and papers. The third section traces the processes through which a dominant account emerged. The final section summarises the government's policy announcements.

1. Participation

A Summit testifies to one of the distinctive dimensions of policy innovation in the public sector, namely the need to engage and gain support from affected interests. Planning responsibilities were assigned to the Department of Industry Science and Resources (DISR). Approximately 160 organisations, including universities, research bodies, industry association and individual firms, took on formal roles ranging from

sponsoring the event, participating in committees, and making submissions.¹ Seven other Commonwealth government departments were also engaged. In addition, three state government departments became involved. However, no central agencies (e.g. Treasury, PM&C) participated.

As the central peak business organisation, The Business Council of Australia took a leading role in most stages of the process. The Australian Chamber of Commerce and Industry was similarly involved. The Australian Industry Group was a sponsor and a member of the Summit Steering Committee. A plethora of smaller more narrowly focused peak bodies also participated at various stages including the Sustainable Energy Industry Association, Federation of Australian Research and Technological Societies, National Medical Health and Research Council, and Engineers Australia.

Research institutes also exhibited a strong presence. These included the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the Australian Research Council, several Co-operative Research Centres and a large number of university and research focused organisations. Finally, a very large number of private sector firms also participated. These firms, and to some extent the other groups, can be further divided according to their sectoral interests:

Resources and Agriculture: Australia's traditional industries of natural resources and agriculture were well represented. Participants tended to be large well established companies with an international export focus like Rio Tinto, Western Mining Corporation, BHP Steel, Comalco, and Wesfarmers.

IT&T Industries: Participants from the IT&T industries could be further divided into two categories. The first was large multinational firms, often foreign owned and involving firms who mostly brought internationally developed R&D to Australia. These included IBM, Alcatel, Hewlett Packard and Ericsson. Telstra might also be included in this grouping. Only Telstra participated in more than one stage.

¹ This analysis of participants was based on an analysis of information that appeared on the Summit website. Department of Industry Science and Resources, *ISR: National Innovation Summit, Steering Committee and Working Groups*, viewed 24 May 2006, <http://www1.industry.gov.au/archive/summit/scwg/index.html>

The second group of IT&T companies was small Australian high tech start ups. Examples included Endurance Electronics, Amicus Software, Treelectric and Sustainable Technologies Australia. These companies were quite active in making submissions but had only limited representation in the official Summit processes. However, their case was also advocated by government and policy research organisations such as Strategic Industry Research Foundation.

Medical Research and Biotechnology: This group had a strong presence in the working groups and the submissions. However, it did not have a significant voice on the Steering Committee, in sponsorship, or on the implementation committees.

Manufacturing: Companies involved in manufacturing figured heavily in the sponsorship of the Summit, but took quite limited roles on committees or in making submissions. Fosters and GMH respectively provided the only manufacturing representation on key committees.

There were two notable omissions from the Summit process. The first was small and medium sized enterprises that were not directly engaged in R&D. The expert literature suggests these firms are an important focus for a non-science driven innovation. The second major omission was service industries. These now make up a substantial proportion of the Australian economy.

2. Analytic Frameworks

The Summit was ostensibly convened to define the ‘problem’ of innovation and to suggest remedies. Submissions and papers were assessed to see how the ‘problem’ was defined and to identify the theory or theories which underpinned this judgement. In the various submissions and papers, there were two major accounts of the ‘problem’ of innovation. The first account focused on the relationship between business R&D expenditure and economic growth. In this perspective, countries with high R&D expenditure, such as the United States, experienced high growth. By contrast Australia’s business expenditure on R&D was quite poor in comparison to other OECD countries coming in 17th out of 24. Furthermore, while R&D spending

was increasing among our trading partners, it had declined in Australia through the 1990s.²

The second assessment focused on the importance of non-science driven innovation as the basis of international competitiveness. In this view, the identification of new products and the continuous improvement of production processes and delivery mechanisms was the essence of economic success. But too few Australian firms were engaged in this form of non-science driven innovation. In a context in which 98% of the world's R&D was done outside Australia, firm capacities to pick up and adapt those innovations was more important to Australia's economic performance than home grown R&D.³ Many submissions also called for the development of a national vision. These different assessments of Australia's 'problem' drew on more broadly based theories about the sources of innovation. These fell into three broad categories.

i. Science Push/ Market failure

The traditional science push account focuses on new technology as the basis of innovation and growth. It takes a traditional market failure approach to explaining a role for government in innovation. Technological developments create spill over benefits that cannot be captured by the company that invested in the research. This approach advocates remedies such as broad based R&D tax concessions and support for early stage investment. Thereafter, the market is regarded as a fully effective mechanism for disseminating information and mediating choice.

ii. Science Push/ Innovation System Failure

The science push/ innovation system failure approach also sees scientific and technological discovery as the driver of innovation and growth. It also considers that there is a role for government in supporting base level research. However, it traces a more complex path from invention to commercialisation. An innovation system

² This account appeared in a number of submissions to the Summit, was widely recounted in the media, and was reproduced in ISIG Report. See the ISIG report at Department of Industry Science and Resources, *ISR: National Innovation Summit*, viewed May 2006, <http://www1.industry.gov.au/archive/summit/index.html>

³ Innovation Framework Paper - [*Shaping Australia's Future*](#), Commonwealth of Australia, October 1999,

includes original researchers, entrepreneurs, venture capital, other firms in related activities, customers, intellectual property institutions etc. It argues that there is a role for government in ensuring that all of the elements of the system are in place and that there are effective linkages between them. Government has an important leadership role in ensuring that the overall system functions well.

iii. Applications Pull / Innovation System Failure

The applications pull approach emphasises consumer needs as the central driver of innovation. This approach puts a firm's relationships with its stakeholders (e.g. customers, suppliers, advisers etc) at the middle of a complex web of feedback loops.

Its vision of the innovation emphasises feedback loops as central to an effective system. This prioritises communication and collaboration between firms, firms in related activities, and customers. In this approach government has a role in fostering collaboration and co-operation between firms, and creating an innovation centred business culture.

Some submissions drew substantially on only one of these accounts. For example, Ernest & Young's submission assumed a science push/market failure account of innovation.⁴ In contrast, the Sustainable Energy Industry Association (SEIA), representing small scale high tech start ups, clearly articulated a science push/innovation system account. SEIA called for programs targeted at sectors of national strategic importance such as green technologies. They championed an active role for government in providing capital for R&D as well as extensive support through the commercialisation process.⁵

⁴ Ms Megan Bartlett, Ernst & Young, Submission to the Industrial Innovation Working Group, 10 Sept 1999. <http://www1.industry.gov.au/archive/summit/reference/submissions/44-Bartlett.pdf>

⁵ Ms Sylvia Tulloch, Sustainable Energy Industry Association, Submission to the Innovation Summit Steering Committee. <http://www1.industry.gov.au/archive/summit/reference/submissions/25-Tulloch.pdf>

The applications pull approaches were advocated by innovation policy experts, DISR officers, innovation consultants and some manufacturers.⁶ But many Summit submissions drew on more than one framework.

3. How a Dominant Account Emerged.

The Summit generated an enormous amount of paper as different views were aired throughout the multi-stage process. Hundreds of submissions were written, working group reports were produced, Summit debates occurred, and more reports were written. All three accounts mentioned above were evident in the sea of paper. However, the various institutions that mediated the Summit Process played key roles in selecting which account or theoretical framework would predominate.

The first step in the process involved the Steering Committee which was initiated by the Business Council of Australia. This steering committee was dominated by the peak bodies that represented Australia's large incumbent companies in the traditional agriculture and resources sector, representatives of the science and research sector, and some smaller high tech start up organisations. There was only one representative of the Commonwealth government.⁷

The Steering Committee established a Policy Group to develop background papers for the Summit. This group was heavily dominated by bureaucrats and policy experts. These policy experts were well versed in applications pull/ innovation system approaches. The language of an innovation system was pervasive. It was present in almost all of the official summit background documents. The submissions and other documents written by government, academic policy specialists, and the major peak bodies all included explanations of applications pull/innovation system accounts of innovation. Their accounts were clearly grounded in state of the art academic thinking at the time, and appeared to convey a degree of policy consensus around these ideas.

⁶ For example, Mr Kim Sweeny, Strategic Industry Research Foundation, Submission to the National Innovation Summit, <http://www1.industry.gov.au/archive/summit/reference/submissions/10-Sweeny.pdf>

⁷ Department of Industry Science and Resources, *ISR: National Innovation Summit, Steering Committee and Working Groups*, viewed 24 May 2006, <http://www1.industry.gov.au/archive/summit/ISIG/isig.html>

DISR also commissioned a Learned Group's report to provide background context to the Summit. The Learned Group used applications pull /innovation system ideas to suggest a major overhaul of existing innovation policy.⁸ They also recommended that Australia re-orient research dollars away from the traditional natural resources and agriculture industries and towards new industries.⁹ In June 1999 the Minister for Education issued a white paper, *New Knowledge, New Opportunities*, which focussed on University based research.¹⁰

Six working groups, with stakeholder-based secretariats also developed background papers. The submissions to these working groups aired a wide range of perspectives. For example, the Human Dimension, Institutional Structures and Interfaces and Industrial Innovation groups attracted submissions that placed a greater emphasis on innovation system approaches,¹¹ while the Incentives and Infrastructure groups attracted submission that focused on science push approaches.¹² However all the groups to some degree had to wrestle with conflicting accounts. For example, the Incentives group that focused on R&D tax concessions also had to contend with demands that incentives should be opened up to reflect non-technology based innovation.¹³ The Human Dimensions group not only focused on the network aspects of Innovation System approaches, but also was presented with submissions about the need for more science graduates.¹⁴

⁸Department of Industry Science and Resources, *ISR: National Innovation Summit*, viewed May 2006, <http://www1.industry.gov.au/archive/summit/index.html>

⁹ Innovation Framework Paper - *Shaping Australia's Future*, Commonwealth of Australia, October 1999, http://www1.industry.gov.au/archive/summit/reference/learned_group/index.html

¹⁰ Department of Education, Science and Training, *New Knowledge, New Opportunities*, viewed at May 2006, (<http://www.dest.gov.au/archive/highered/otherpub/greenpaper/index.htm>)

¹¹ Mr Kim Sweeny, Strategic Industry Research Foundation, Operational Excellence Submission to National Innovation Summit, viewed 24 May 2006, <http://www1.industry.gov.au/archive/summit/reference/submissions/10-Sweeny.pdf>

¹² [Mr David Gelb, KPMG](#), Submission to National Innovation Summit, viewed 24 May 2006, <http://www1.industry.gov.au/archive/summit/reference/submissions/26-Gelb.pdf>

¹³ [Dr Miriam Goodwin, Goodnews Marketing & Communications Pty Ltd](#), Submission to National Innovation Summit, viewed 24 May 2006, <http://www1.industry.gov.au/archive/summit/reference/submissions/12-Goodwin1.pdf>

¹⁴ [Mr Michael Berry, Office of the Queensland School Curriculum Council](#), submission to National Innovation Summit, viewed 24 May 2006., <http://www1.industry.gov.au/archive/summit/reference/submissions/4-Berry.pdf>.

The pre-Summit policy scoping activities generated a vibrant and substantial debate. A variety of paradigms were aired. A number of participants called for shift in paradigms towards the innovations system and applications/business-driven approaches as a way of generating greater outcomes for taxpayer dollars.

The Innovation Summit itself took a different character. Held in Melbourne in February 2000 there were 550 participants from government, the research sector, and business. Participation was weighted to the public sector, universities and research institutes. The business presence tended to be larger corporates, with a lesser number of small businesses in attendance together with industry and business associations.¹⁵

The Summit was organised around three themes, namely (i) a competitive environment (ii) investing in ideas and (iii) building industry research linkages.¹⁶ They were strongly based in a science push/market failure model of innovation. The initial emphasis on the importance of ‘a competitive environment’ and getting market conditions right reflected a neo-classical view of government’s role in facilitating economic performance. The second theme of investing in ideas reflects the neo-classical view that underperformance in innovation was primarily due to a market failure around the investment in ideas. The third theme gestured to the innovation system perspective in recognising the linkages involved in turning research into products, though the label of the theme again reflects a narrow view of the innovation system. These themes structured the program.

However, individual sessions placed more emphasis on innovation systems approaches. Of the five sessions in the Investing in Ideas theme, three were clearly based in application pull/innovation system approaches. Two centred on building networks, collaboration and linkages and the third centred on shifting the innovation focus onto applications pull approaches to innovation. Similarly, of the four sessions on the Building Industry-Research linkages theme all could be seen to be consistent

¹⁵ Department of Industry Science and Resources, National Innovation Summit – The Event, viewed 24 May 2006, <http://www1.industry.gov.au/archive/summit/event/index.html>

¹⁶ Department of Industry Science and Resources, National Innovation Summit – Summit Program, <http://www1.industry.gov.au/archive/summit/event/TheProgr.pdf>

with an innovations systems approach.¹⁷ The imbalance in the program suggested a tension between the approach being taken by the lower level bureaucrats in the Innovation Policy Branch who had provided the secretariat to the Summit, and those orchestrating the higher level structure of the Summit.

At the end of the Summit the President of the BCA and the Minister for Industry Science and Resources released the communiqué based on the three Summit themes.¹⁸ The communiqué claimed to “broadly outline the Summit findings and the way forward”.¹⁹

To progress the findings of the Summit, an Innovation Summit Implementation Group (ISIG) was established. Its task was to consolidate the findings from the Summit, identify concrete potential actions, and prioritise their implementation. The membership of the ISIG represented a break with earlier stages of the process.²⁰ Most of the private sector members of the ISIG had not been involved in the Working Group stage of the process and had not made submissions to the earlier deliberations. They had however been sponsors of the Summit. They were drawn largely from resource and agriculture industries and the research sector. The Federal Government was also more strongly represented with high level bureaucrats from DISR and DEETYA. There was also a change over in Secretariat support with few of those involved in earlier stage of the process being involved in later stages of the process.

The ISIG Report, *Innovation – Unlocking the Future*²¹, championed policy continuity. The ‘scene setting’ elements of the report centred on the low level of Australian business investment in R&D. Its emphasis on R&D spending as the basis of innovation provided the ground work for a science push approach. The organisation of the report accorded a much lower priority to innovation system conceptions.

¹⁷National Innovation Summit, Summary of Breakout Sessions, <http://www.industry.gov.au/errorhandler.cfm?url=http://www.industry.gov.au/archive/summit/ois/comunique.doc>

¹⁸ Ibid.

¹⁹Innovation Summit Implementation Group, *Innovation - Unlocking the Future*, August 2000, p 34, viewed at 24 May 2006, <http://www1.industry.gov.au/archive/summit/index.html>

²⁰ Based on an analysis of information available at National Innovation Summit, Innovation Summit Implementation Group, viewed at 24 May 2006 <http://www1.industry.gov.au/archive/summit/ISIG/isig.html>

²¹Department of Industry Science and Resources, *ISR: National Innovation Summit*, viewed May 2006 <http://www1.industry.gov.au/archive/summit/>

Analysis was organised around three themes. These were altered only slightly from the Summit. The reports' big ticket recommendations were primarily for increases in funding through existing policies and instruments – for example, an increase in funding through the R&D tax concession, a doubling of ARC funding, a doubling of the Commercialising Emerging Technology (COMET) program and an increase in remuneration for researchers. The final stage of the process occurred when the ISIG report was delivered to the Prime Minister's Science, Engineering and Innovation Council (PMSEIC) in August 2000.

The Chief Scientist, Dr Robin Batterham, also initiated a post-Summit round of consultations, mainly with the Universities, and his report, *A Chance to Change* was also delivered to PMSEIC at the same time.²² PMSEIC was given the task of responding to both reports. The Council is the Australian Government's principal source of independent advice on major national issues in science, engineering and technology.²³ PMSEIC was renamed in 1997 to include innovation. Its terms of reference imply a science-based, linear view of innovation, an approach which is reinforced by the membership which is drawn almost universally from the research community.

4. Policy Outcomes.

After this deliberation, DISR prepared a Cabinet submission and this was considered and endorsed in December 2000. In January 2001 the Prime Minister issued a statement that responded to these developments entitled *Backing Australia's Ability*.²⁴ *Backing Australia's Ability I (BAAI)* was presented as a \$3 billion dollar investment in science and innovation over five years. The industry push for improvements in the R&D tax concession was successful. A premium R&D tax concession of 175% was

²² Robin Batterham, *Australian Chief Scientists Report : A Change to Change*, as viewed at May 2006, http://www.dest.gov.au/chiefscientist/reports/chance_to_change/Documents/ChanceFinal.pdf

²³ Department of Education Science and Training, *The Prime Minister's Science, Engineering and Innovation Council*, viewed 24 May 2006, http://www.dest.gov.au/sectors/science_innovation/science_agencies_committees/prime_ministers_science_engineering_innovation_council/

²⁴ Department of Industry, Science and Resources, *Backing Australia's Ability*, viewed May 2006, http://backingaus.innovation.gov.au/docs/statement/backing_Aust_ability.pdf

introduced, as was a rebate scheme for small companies. The big ticket items included providing \$736 million to double the ARC research grants scheme and \$155 million for research facilities. It also included a \$176 million boost to biotechnology and an ICT centre of excellence. As a result the final policy statement was even more science push focused than the earlier stages of the process.

The statement replaced the ISIG theme of 'generating an ideas culture' with 'Developing and Retaining Australian Skills'. Initiatives under this theme were also strongly aligned with a science push perspective. Twenty five new Federation Fellowships were announced. The number of Australian Post Doctoral Fellowships was doubled, and the remuneration of those positions boosted. Furthermore, 21,000 additional full time student places were to be created, with priority given to ICT, mathematics and science courses.

Other initiatives included \$227 million to expand the Co-operative Research Centres program. The COMET program was doubled at a cost of \$40million. A Pre-Seed Fund was extended to assist in commercializing public sector research at a cost of \$79 million, and \$100 million was provided for the Innovation Access Program that facilitates Australian access to overseas technology.

Subsequent Mapping Programs: Backing Australia's Ability set out a framework for Australia's innovation system to be mapped and benchmarked in subsequent annual reports.²⁵ The framework ensured that subsequent analysis of innovation would start from a science push base. It also ensured that there would be rich statistical

²⁵ Department of Industry Science and Resources, Backing Australia's Ability – Innovation Reports, , Backing Australia's Ability: Real Results Real Jobs 2001-2002, viewed April 2006, <http://backingaus.innovation.gov.au/2001/statement/index.htm>
Department of Industry Science and Resources, Backing Australia's Ability – Innovation Reports, , Backing Australia's Ability: Real Results Real Jobs 2002-2003 viewed April 2006
<http://backingaus.innovation.gov.au/2001/statement/index.htm>
Department of Industry Science and Resources, Backing Australia's Ability – Innovation Reports, , Backing Australia's Ability: The Australian Government's Innovation Report 2003-04, viewed at April 2006, <http://backingaus.innovation.gov.au/2001/statement/index.htm>
Department of Industry Science and Resources, Backing Australia's Ability – Innovation Reports, , Backing Australia's Ability: The Australian Government's Innovation Report 2004-05
Viewed at April 2006, <http://backingaus.innovation.gov.au/2001/statement/index.htm>
Department of Industry Science and Resources, Backing Australia's Ability – Innovation Reports, , Backing Australia's Ability: The Australian Government's Innovation Report 2005-06, viewed at April 2006,
<http://backingaus.innovation.gov.au/2001/statement/index.htm>

information on which to base further claims for policy intervention on science push approaches to innovation.

This step also reflected significant machinery of government changes, with primary responsibilities for innovation transferred wholly to the Education Department. The Industry Department retained a secondary role – primarily in relation to venture capital and various firm-level programs. This reversed a decision of the early 1990s to give lead responsibility to the Industry Department, a decision which was designed to recognise the primary role of firms in the innovation process (interview, Dr Paul Wellings).

Backing Australia's Ability 2: The on-going impact of these intellectual frameworks was evident when Backing Australia's Ability 2 was released in 2004. The \$5 Billion package took innovation policy out to 2010-11. The release was structured around the same three themes. The package reflected continuity in policy approach. The big ticket items were extensions of the same major items from BAA 1. It included boosts to CSIRO, ARC, NHMRC, increased research infrastructure spending and additional money for the Centres of Excellence. Again, there were more modest additions to commercialization programmes COMET and the Co-operative Research Centres.²⁶

The Innovation Summit resulted in an innovation policy lock-in that seemed set to last at least a decade.

II. The Innovation Summit and Strategic Policy Capabilities

At the outset, the critical role of theory or paradigms in both public policy and politics might be underlined. James Q Wilson describes their contribution in the following terms:

‘(Theory contributes) the conceptual language, the ruling paradigms, the empirical examples (note I say examples, not evidence) that become the accepted assumptions of those in charge of making policy. Intellectuals frame, and to a large degree conduct, the debates about whether this language and these

²⁶ Australian Government, *Backing Australia's Ability Information Booklet*, May 2004, http://backingaus.innovation.gov.au/info_booklet/, 5.12.2006.

paradigms are correct. The most influential intellectuals are those who manage to link a concept or a theory to the practical needs and ideological predispositions of political activists and government officials. The most important source of intellectual influence on public policy arises out of the definitions of what constitutes a problem...What intellectuals mostly bring to public policy debates is not knowledge but theory.....Some theories, if adopted, will make us better off. The problem is to know which ones.' *Public Interest*, 64, 1981, pp. 31-47.

In public policy, the conceptual framework or more simply the ideas that ultimately become official thinking play a variety of practical and political roles. They justify designating a particular situation as a problem and they set forth the scope of remedial action (e.g. Edwards, 2007). They determine conceptions of reality, pertinent facts, and relevant causalities and (often tacitly) champion particular values. They determine which interests or identities have standing and define their role(s) in the relevant system. Choice between frameworks will arguably be heavily influenced, if not determined, by deliberation amongst bureaucrats and between departments. This reflects the authority and standing of departments in the policy making process and the role of knowledge or expertise (e.g. Mintrom, 2003; Schumpeter, 1976).

How effectively did the processes described in the preceding section evaluate heterodox theories of innovation? A first issue concerns the agenda. Who set it? In the present case, pressure from the peak business organisation, the BCA, stimulated fresh attention to the 'problem' of innovation. Its advocacy proved fortuitous: it provided an opportunity for other actors within and beyond the formal system to introduce different or augmented understandings. As the process unfolded, policy makers and other participants were invited to consider three paradigms namely: a science push/market failure narrative; a science push/innovation system failure narrative; and a market pull/innovation system failure narrative (e.g. West and Smith, 2005).

The challenge that was implicit in these latter approaches to conventional (neo-classical) wisdom about the role of the state in the economy also deserves to be underlined. Take the different ways knowledge figures in neo-classical and NIS / applications-pull paradigms. In neoclassical theory, knowledge is generally conceived as a homogenous stock that can be augmented incrementally and that diffuses instantaneously. Knowledge externalities arise because a firm's production depends both

on its own efforts and on the general stock. In this perspective, the state can influence the pace but not the direction of technological change. This can also be associated with a view of the innovation process as one that is linear in direction – with the flow from pure to applied research and then on to development and commercialisation.

By contrast, NIS and applications-pull theories treat knowledge as lumpy and diffusion as problematic. The most useful forms of knowledge often arise from problem solving at the firm level. These approaches also assume that pay-offs vary between different kinds of knowledge and that feedback loops are critical. These premises license attention to the pace, direction and diffusion of technological change and to different sources of knowledge. In other words, they license a selective approach. They also license attention to non-market forms of coordination (such as sectoral research institutes, industry clusters, industry associations).

The Summit process was ostensibly an occasion to assess these differences. This unfolded through three overlapping phases: pre-Summit preparations; the Summit itself; and the post-Summit assessments. Different deliberative dynamics were evident in each phase:

Pre-Summit: As we have seen, the pre-Summit phase involved extensive work at departmental and expert levels to introduce possible new framings to a broader public sector constituency. The Industry Department itself published an important compendium of papers. It was also instrumental in establishing an Expert Group whose report championed the newer paradigms.

But the commissioning of this report was the fortuitous result of the retirement of Minister Moore in 1998 and his replacement by Minister Minchin. The latter wanted time to get across the issues and his departmental advisers suggested outreach to relevant external expertise. This report was included amongst the Summit documents but its authors had no special role in the Summit preparation or proceedings.

The Summit: The second phase was represented by the Summit itself. Responsibility for its structure was shared between a senior officer of the Industry Department and the Director of the BCA. These individuals progressively assumed more powerful

gatekeeper roles both in defining Summit findings and in assessing their policy implications. As it happened, both individuals had formerly worked together in the Prime Minister's Department. One also had a background in the (then) Industry Commission and thus a strong socialisation in neo-classical thinking.

Other actors who had been prominent in the initial phase of the process progressively assumed subsidiary roles. The Innovation Branch of the Industry Department, which had provided the Secretariat for the pre-Summit working group, was progressively disengaged from any involvement in post-Summit assessments. The Secretariat for the Summit was also composed of Departmental officers, but drawn more widely from other sections of the Department. The invitation list for the Summit was jointly formulated by the BCA Director and the Department.

Although, as noted earlier, there were gaps in the representation of particular interests, the Summit did engage a cross-section of the business and research communities. Participants were invited to submit papers and, as the earlier analysis indicated, many did. Competing perspectives were exposed. The Summit and its associated processes involved a very considerable mobilisation both of stakeholders and perspectives. But the use to which these varied materials were put depended primarily on the decisions of the gatekeepers.

Post-Summit: Through this phase, findings and recommendations crystallised. This involved the ISIG group and the Chief Scientists report. Both documents were presented to the PMSEIC in November. Participation in these processes was quite confined. The ISIG group was dominated by interests associated with existing broad approaches. The Chief Scientists report focussed totally on the publicly funded research system and its role as the originator of ideas that could later be converted to products. Meantime PMSEIC was also dominated by people drawn from the research community and its small secretariat was not charged with brokering new policy possibilities.

Unlike the pre-Summit papers, and many of the Summit submissions, the reports of both the ISIG group and the Chief Scientist were informed by the science push/market failure paradigm. There is little evidence of the influence of other approaches in either

document. Nor is there evidence that their merit was assessed and discounted. The science push/market failure paradigm subsequently underpinned the Prime Minister's statement *Backing Australia's Ability*.

In hindsight, it is hard to avoid the conclusion that the Summit represented an elaborate process of search and engagement that sanctioned an outcome that was, in most respects, largely pre-determined. The Summit itself seems to have been largely a decorative activity. Its outreach and deliberations were seemingly designed to mobilise industry and media attention and to communicate the government's commitment. But there is no evidence that it exercised any substantive influence on strategic policy thinking. The obstacles confounding any other outcome are also, in hindsight, very considerable. At the outset of this paper, three powerful inhibitors of strategic thinking were noted. One involved the lock-in associated with a present successful strategy. A second involved the constraints on policy choices associated with multiple veto points. The third involved the pressure to maintain medium term fiscal and policy discipline in a system composed of a variety of semi-independent agencies and organisations, all with pressing expenditure and policy agendas. All three factors were arguably powerful influences in this present case – indeed all three seem unavoidable as constraints on strategic thinking in public sector settings.

Consensus at elite bureaucratic levels on a medium term policy frame (in this case neo-classical economic strategies) has many advantages. Special pleading by rent seeking interests can be more easily resisted. Policy development can advance around a more or less coherent agenda. Consensus means divisions between powerful departments cannot be exploited for sectional advantage. Consensus facilitates coordination between departments. But consensus can also create lock-in that involves (at best) resistance and (at worst) blindness to new empirical developments or new theoretical perspectives. This would doubtless be compounded by the pressures on senior officers. Those faced with assessing and/or resisting complex day to day claims would hardly have time for the more reflective or open minded assessments associated with strategic deliberation. This speculation is reinforced by research on innovation blockages in private sector organisations. According to Barsh et al (2008):

The analysis revealed those employees, largely middle managers, with the most negative attitude towards innovation were also the most highly sought after for advice about it. In effect, they served as bottlenecks to the flow of ideas and the open sharing of knowledge. A further analysis of the people in this group highlighted their inability to balance new ideas with current priorities....We have observed that middle managers pose similar challenges in many organisations.

In building strategic capability, this experience suggests that there are at least three requirements. The first concerns the need to engage central departments. Treasury and the Prime Ministers Department could have been engaged at a much earlier phase of the policy cycle. This is because of the critical role of these departments as gatekeepers of policy orthodoxy. If new thinking about innovation strategy was to be contemplated, officers of at least one of these gatekeeper departments needed to be engaged in processes of assessment. They were not part of pre-Summit or Summit processes.

A second requirement arises from the framing of this strategic assessment. Paradigms, instruments and settings (the three forms of policy innovation nominated by Hall and described at the outset of this paper) were considered at the same time. The evidence suggests that the process of assessing innovation paradigms should have been separated from evaluation of instruments and settings. This is because quite different considerations are involved in each exercise. In the former case, the relevance of an ends-means paradigm; and in the latter, an assessment of ways to achieve an agreed end.

A third requirement concerns the need to make strategic assessments routine. None of the existing institutions seemed able to trigger strategic re-assessment. The BCA set the agenda. Fresh paradigms were introduced through two key processes - the expert groups and the Summit format. Both were fortuitous events. They were not elements in a routine strategic scanning and assessment process. Of all the actors involved in Summit processes, only the Industry Department branch had a specific mission to scan and assess new developments. This was mixed with its day to day tasks. The branch's work was apparently not considered important at senior levels of its own Department. Interested policy makers from other departments and agencies were not joined to these processes. Even if linkages had been established, they would most

likely not have mediated reflective and imaginative assessment. The newer paradigms represented a fundamental challenge to orthodoxy and the Industry Department officers did not have the standing to challenge it.

The assessment of new paradigms in present bureaucratic and political settings presents a considerable challenge. The intellectual task involves a complex range of theoretical and factual assessments. Uncertainties are chronic. There can be a wide range of pertinent perspectives. The political challenge is also substantial. Irrespective of the domain and the paradigm, there will inevitably be a wide range of affected interests. They need to be engaged in the deliberative process, ideally without committing the executive. The evidence surveyed here suggests that the present Australian policy system is not organised to respond to the strategic policy challenge.

There are a number of pointers to possible remedies, and arguably there is no single organisational or institutional solution (e.g. Fischer et al, 2007; Marsh and Yencken, 2005). For example, responding to similar imperative, the Cabinet Office in the UK has established a Strategy Unit to act as a gatekeeper in filtering new policy thinking and projecting it to appropriate departments and individuals. The establishment of a separate unit recognises the distinctive character of strategic policy work. A former head of PM&C has already proposed such an approach for Australia.²⁷ But such activities depend on a wider infrastructure of strategic research organisations, conversations and interaction. The Strategy Unit's own paper on innovation in public management points to its dependence on think tanks and other research bodies as sources of ideas (Mulgan, 2003).

As a cursory glance at its web site suggests, the Strategy Unit has notched up an impressive work record. But its impacts have also been constrained by the media, which is currently the principal conduit for broader interest group and public

²⁷ Michael Keating (2004) observes: 'PM and C (Department of Prime Minister and Cabinet) probably represents the best hope of keeping abreast of longer term issues. The Department's role would be to establish the validity of an idea or issue and much of the work can be forwarded to the responsible Minister (s) for his/her department to follow up. PM and C has the advantage of being reasonably close to the Prime Minister and can borrow that authority to ensure that the necessary work is initiated. If properly led and disciplined, PM and C could establish some detachment from the hurly burly of the daily political issues, which can then largely be left to the PMO (Prime Minister's Office). Of course, this system for coordinating longer-term thinking through PM and C will only work if the PM wants it, but that is probably equally true of any other possible system' (p. 172-173).

engagement. The media mostly deals in sensation and bite-sized facts. Sensible policy suggestions for a waste tax and road pricing and for a fresh approach to drugs (to cite just three examples) were instantly killed by sensational headlines. From the perspective of sensible public policy, the media's role is largely damaging. The fact that it has this role reflects the absence of infrastructure in which the broader strategic considerations, of which the specific proposals cited above were a part, could be publicly aired, but without committing the executive.

A more radical solution is suggested by Irish practice, which also involves a Westminster-style governance system. Here two semi-independent agencies, Forfas and the National Economic and Social Council (NESC), mediate respectively industry and social policy strategy. Both are at arms length from the mainstream departments and the government. But through board structures and unofficial links there is substantial interaction. Both also have interest mobilising roles. Both are relatively small units (Forfas has a staff of around 60 and the NESC no more than 10). Similar arrangements are evident in the very different political environment of Denmark, where policy commissions routinely mediate new strategies into the public agenda (Pedersen, 2006). Ireland and Denmark are both small and homogenous states. In Australia's case, the fate of the old Commission on the Future is a salutary reminder of the irrelevance of organisations that lack standing in the bureaucratic structure. On the other hand, the Productivity Commission operates in much the same way as the Irish bodies, albeit governed by a different primary mission.

The need for some degrees of separation between strategic and day-to-day or medium term decision-making is reinforced by literature on comparable situations in business. The importance and distinctive character of strategic knowledge is increasingly recognised – for example in notions of 'double-loop learning' (Senge, 1994). Similarly, the difficulties in gaining attention for radically new ideas where a successful product or process already exists are extensively documented (Nonaka, 1995; March, 1999). The remedy proposed for companies also involves a partial separation between strategic and operational activity with infrastructure to engage top decision makers at key points in both processes. 'As one executive we know put it, you don't want people who are engaged in hand-to-hand combat to design a long-term weapons system' (Bryan and Joyce, 2005, p. 3). More generally, Crouch (2005),

associates innovation with the existence of redundant organisational capabilities. This creates the free play that allows adaptive strategies to be imagined.

These challenges are distinctive in public sector settings, partly because of the dynamics of an adversarial political system, partly because of the capacity of a sensationalist media to hobble innovative proposals, and partly because of the dispersed array of departments and agencies that can be involved. These issues are all compounded in a federal system. Yet the stakes too are large, as the range of emerging strategic issues that were listed at the outset of this paper suggest.

In an Australian context, the solution could include the creation of dedicated strategic capability with appropriate standing and credibility in the bureaucratic system. But this would not solve the problem of engaging constituency and public opinion, which is also a critical element in assessing new paradigms. Does this suggest a role for parliament? As argued elsewhere (e.g. Marsh and Yencken, 2005; Marsh 2008), its committees can be key agents in engaging interests and exploring the scope for bipartisanship. As the policy changes enacted after 1983 illustrate, tacit or explicit bipartisanship is the strongest foundation for decisive policy action. By definition, emerging paradigms are beyond immediate partisan contention. In sum, there is unlikely to be any single organisational solution. Some responsibilities might be assigned to a unit in PM&C. Others might be assigned to a parliamentary committee. A role might also be left open for independent research, such as is now provided by the Productivity Commission.

Whatever the remedy, this present case study of deliberations in a particularly challenging but critical policy domain suggests the present Australian policy system is inadequately equipped for the strategic task. The avoidance of lock-in and decision failure/paralysis, and the formation of constructive linkage between new knowledge and policy action, is a considerable problem. The policy system that now exists has been crafted to superintend liberalisation and deregulation, a phase in policy development that is now largely complete. A new agenda of domestic social and environmental issues and a new set of economic challenges call for new capacities for strategic assessment and coalition building. Such infrastructure is now conspicuously absent.

Bibliography

- Arthur, B 1994, *Increasing Returns and Path Dependence in the Economy*, Ann Arbor: University of Michigan Press.
- Beardley S. et al. 2006, Competitive Advantage from Better Interactions, *The McKinsey Quarterly*, 2.
- Bryan L. 2004, Making a Market in Knowledge, *The McKinsey Quarterly*, 3.
- Bryan L. and C. Joyce, 2005, The 21st Century Organisation, *The McKinsey Quarterly*, 3.
- Bryant, K. 1996, *Australian Business Innovation: A Strategic Analysis*, Canberra: Australian Government Publishing Service.
- Chapman, B. 2006, *Government Managing Risk*, London: Routledge
- Conley, T. 2001, The Domestic Politics of Globalisation, *Australian Journal of Political Science*, Vol. 36, 2, pp.223-246
- Crouch C. 2005, *Capitalist Diversity and Change*, Oxford: Oxford University Press.
- Cutler, T. 1997, *A National Policy Framework for Structural Adjustment with the New Commonwealth of Information*, Report of the Information Policy Advisory Council, Canberra: Australian Government Publishing Service.
- David P. 1991, *Computer and Dynam.: The Modern Productivity Paradox in a Not too Distant Mirror*, Paris: OECD.
- Dosi, G. et al 1988, *Technical Change and Economic Theory*, London: Pinter.
- Dosi, G. 1997, Opportunities, Incentives and the Collective Patterns of Technological Change, *The Economic Journal*, 107 (444), pp. 1530-47.

Dosi, G and L. Orsenigo 1988, *Coordination and Transformation: An Overview of Structures, Behaviours and Change in Evolutionary Environments* in Dosi et al op. cit.

Edwards, L. 2002, *How to Argue with an Economist: Re-opening Political Debate in Australia*, Melbourne: Cambridge University Press.

Edwards, M. 2004, *Social Science Research and Public Policy*, Canberra: The Academy of the Social Sciences in Australia.

Esping-Anderson, G. et al, 2002, *Why we need a new welfare state*, Oxford: Oxford University Press.

Fischer T, G Schmitz and M Seberich (eds), 2007, *The Strategy of Politics, Results of a Comparative Study*, Berlin: Verlag Bertelsmann Stiftung

Flannery, T. 2006, *The Weather Makers: How Man is Changing the Climate and What it Means for Life on Earth*, London: Penguin/Allen Lane

Goldsworthy, A (chair), 1997, *The Global Information Economy: The Way Ahead*, Commonwealth of Australia: The Information Industries Taskforce,

Hall, Peter, 1993, *Policy Paradigms, Social learning and the State: The Case of Economic Policy Making in Britain*, *Comparative Politics*, Vol. 25, 3, pp. 275-297

Keating, M. 2004, *Who Rules? How Governments Retains Control of a Privatised Economy*, Sydney: The Federation Press.

Kelly, P. 1992, *The End of Certainty*, St. Leonards: Allen and Unwin.

Lipsey, R. et al 2005, *Economic Transformations: General Purpose Technologies and Long Term Economic Growth*, Oxford: Oxford University Press.

- Lipsey R G 2005, Markets, Technological Change and Economic Growth, *The Pakistan Development Review*, 33, pp. 327-352
- March, J. 1999, *The Pursuit of Organisational Intelligence*, London: Blackwell.
- Marsh, I. 1995, *Beyond the Two party System*, Melbourne: Cambridge University press.
- Marsh I. 2005 Neo-liberalism and the Decline of Democratic Governance, *Political Studies*,
- Marsh, I and D Yencken, 2005 *Into the Future: The Neglect of the Long Term in Australian Politics*, Melbourne: Black Inc.
- Marsh I and L Edwards, The Development of Australia's Innovation Strategy: Can the Public Sector System Assess New Policy Frameworks? *Occasional Paper*, North Sydney: Australian Business Foundation, April, 2008.
- Mintrom M. 2003, *People Skills for Policy Analysis*, Washington: Georgetown University Press.
- Mulgan G and D Ashbury, 2003, *Innovation in the Public Sector*, London: The Cabinet Office,
- Nelson R and S. Winter, 1982, *An Evolutionary Theory of Economic Change*, Cambridge Ma: Harvard University Press.
- Nonaka I. 1995, *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*, New York: Oxford University Press.
- Pappas, Carter, Evans and Koop/Telesis, 1990, *The Global Challenge: Australian Manufacturing in the 1990s*, Melbourne: Australian Manufacturing Council.

Pedersen, Ove K 2006, Denmark: An Ongoing Experiment in John Campbell, John Hall and Ove Pedersen (eds) *National identity and the Varieties of Capitalism: The Danish Experiment*, Montreal: McGill and Queens University press, pp. 453-470.

Porter, M. 1990, *The Competitive Advantage of Nations*, London: Macmillan.

Porter, M. 1999, *On Competition*, Cambridge: Harvard Business School Press.

Rodrik, D. 2004, *Industrial Policy for the Twenty First Century*, Geneva: United Nations Industrial Development Organisation.

Romer, P. 1986, Increasing Returns and Long Run Growth, *Journal of Political Economy*, Vol. 94, 3, pp. 1002-1037.

Romer, P. 1990, Endogenous Technological Change, *Journal of Political Economy*, Vol. 98, S71-102.

Rosenberg M. 1994, *Exploring the Black Box: Technology, Economics and History*, Cambridge: Cambridge University Press.

Senge, Peter (1994), *The Fifth Discipline: the art and practice of the learning organisation*, New York: Doubleday/Currency

Schon D and M Rein 1994, *Frame Reflection: Towards the Resolution of Intractable Policy problems*, New York: Basic Books.

Schumpeter J. 1934, *The Theory of Economic Development*

Schumpeter J. 1976, *Capitalism, Socialism and Democracy*, New York: Harper Colophon Books

Scott-Kemmis, D. et al 2005. *No Simple Solutions, Key Finding from the Australian Innovation Systems Project*, Canberra: Australian National University.

- Smith K. and J. West, 2005, *Australia's Innovation Challenges: The Key Policy Issues*. Submission to House of Representatives Standing Committee on Science and Innovation, 28th April 2005.
- van der Heijden, K, 1996, *Scenarios: The Art of Strategic Conversation*, Chichester: John Wiley and Sons.
- Von Hippel, E.1988, *The Sources of Innovation*, New York: Oxford University Press.
- Welbourn M, M Wardrop, K Bryant, 1994, *The Pace of Change: Technology Uptakes and Enterprise Improvement*, Canberra: Australian Government Publishing Service.
- Wentworth Group of Concerned Scientists, 2003, *Blueprint for a National Water Plan*, WWF Australia.,
- Watson, D. 2002, *Recollections of a Bleeding Heart, A Portrait of Paul Keating PM*, Milson's Point: Knopf.