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Bringing Innovation to Centre Stage: The Rhetoric of Commercialisation and Cross-Sector Collaboration

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Abstract
As a key element in Australia’s national innovation system, public sector organizations, such as universities and public-funded research agencies, have increasingly become involved in R&D collaborations with firms. Government policy has encouraged this cross-sector collaboration, and in the most recent policy “act” has focused on the commercialisation of research findings (through which R&D outputs are translated into marketable commodities) and has encouraged public sector organizations to become more directly involved in this activity. But while the policy rhetoric has contributed to a discourse of marketization, through which cultural change in the research performing organizations is both promoted and legitimised, there are other voices in the unfolding policy drama which point to the complex and multifaceted nature of commercialisation in national economies. These countervailing voices emphasise the multiple roles that public sector organizations play in national innovation systems, and this introduces organizational role ambiguity into the discourse leading to confusion among the research performing actors. It is concluded that, given the complex and subtle nature of innovation processes, the traditional dichotomy between applied (or commercially-focused) research and “public good” research is no longer tenable nor helpful in the policy debates.

Keywords: commercialisation, collaboration, innovation, R&D, policy.

Introduction
Innovation in whatever form – e.g. organizational, product, process, and managerial – involves constellations of organizational actors engaged in the creation and exploitation of knowledge. While much of the focus in innovation studies has been on the activities of firms, it is now widely acknowledged that this requires a supportive context (“a national innovation system”) in which public sector organizations play a key role. More recently, public sector organizations have become directly involved in innovation through collaborations with firms, a trend driven by both government policies and corporate practices. Following the dramaturgical trend in the social sciences, we can conceive of innovation as a “drama”, involving an array of organizational actors and played out in national and international theatres or arenas. Thus, the R&D which underlies innovation is largely a “back stage” activity carried out in laboratories and at testing facilities, and innovation only moves to “centre stage” when something new is introduced into a market (i.e. after knowledge has been translated into a commodity). The actualisation of innovation has been termed “commercialisation”, and this has become the focus of government policy in Australia. A key element of this policy has been to foster
the commercialisation of research conducted by actors in the public sector, as exemplified by a recent review which argued that universities have a responsibility “to assist in transforming their knowledge into potential fruits”. However, a closer examination of the debates around this policy thrust reveals that there are different interpretations of the commercialisation process, and that a simplistic dichotomy between commercially-focused research and research producing “public good” knowledge is no longer tenable given the changing nature of the relationship between universities and industry. In addressing these issues, the paper explores one act in the current drama of Australian innovation policy with particular reference to the multitude of actors, stages and varying interpretations therein.

The stimulus for this paper came from our ongoing research on the Australian Cooperative Research Centre (CRC) Program. The study aims to extend existing research on cross-sector collaboration to include initiatives which are focused on market outcomes resulting from collaborative R&D. This latter form of collaboration is unique and involves cross-sector ventures established under the auspices of government-sponsored “hybrid agencies” - like the CRCs - to conduct R&D. Such collaborations, which involve consortia comprising public sector research agencies (e.g. CSIRO), universities and companies, bring together stakeholders with quite different interests, objectives, modes of operation, capabilities, resources, timeframes and commitments. What is of particular interest in these collaborations is that, although they are not market-based (i.e. not established on the basis of market transactions), and they involve “public sector” organizations which are not generally driven by market considerations (i.e. are not primarily in the business of commodity exchange), they are set up to develop marketable products or other commercialisable technologies. Our study focus is novel in that very little detailed research has yet been conducted to examine how the CRCs operate within their interorganizational domains, and none have specifically investigated the dynamics of commercially-focused collaborations. The CRC Program was launched by the Australian Government in May 1990 to encourage cooperation between researchers and research users across public and private sectors, thereby strengthening the link between research and its application. There are currently (i.e. in mid-2006) 72 CRCs in operation, covering six broad areas of application, while more than 100 have been created over the life of the Program. Following a joint ministerial review in 1998 there has been a greater emphasis on commercialisation in the Program with more of a “focus on novel technologies that can assist Australian industry to become more innovative, competitive and productive”.

The first indication we had of the problematic nature of commercialisation for the CRC Program emerged from our preliminary qualitative research which involved in-depth interviews with CRC managers in the manufacturing and medical sectors. As one university-based CRC board member put it: “.... there is a lot of bullshit with commercialisation, especially with everyone going around in circles. There is a lot of emphasis on commercialisation as the saviour of [the] CRCs. You will never make sufficient money with commercialisation of [intellectual property] to bulk your cash flow significantly. .... It is the users of innovation who make the money not the suppliers of innovation.” Although some interviewees did discuss various commercially-focused ventures by their CRCs (some of which had been successful), the general response was to point to the problems involved and to question the current policy emphasis on commercialisation. One CRC R&D manager in the manufacturing sector addressed this issue at length, e.g.

“I don’t think much of the commercialisation path that that they are going on. .... We’ve got a reasonably large size research centre here and we never ignore the possibility that something might be commercialised. It’s just those opportunities don’t come up that often, and when you try to commercialise it’s extremely hard to get a lot of money [for this purpose] .... so as a sideline to your activities it’s almost a waste of time ... You might have that lucky thing that comes along, [so] you might just as well wait and see for it to come along without spending a lot of effort to try and commercialise things .....”

Further indications of this viewpoint came in a later stage of our study when we approached the CEOs of selected CRCs (i.e. those that were considered to be more commercially-focused) to help us put together a sampling frame of CRC project leaders for a planned survey. In our approach to these CEOs we explained that we had identified their CRCs as those which were most likely to be pursuing
“projects aimed at commercialisation” and that our survey was specifically concerned with “commercially-focused CRC projects”. We had assumed that this was both comprehensible and clear to the CEOs, but a common response was to query what exactly we meant by “commercialisation” (e.g. one CEO replied “I will be pleased to ask our project leaders to contribute to your research once I have established that I fully understand what you mean by ‘our commercially-focused R&D projects’ and ‘commercialisation of R&D’. The reason for my caution is that I have had many experiences of considerable differences [in the] meaning ascribed to these phrases”). Subsequent attempts at clarification (emphasising that we were interested in projects that had a direct or indirect concern with the creation of commercialisable outputs, in the form of new products, technologies or processes, and it was this orientation towards outputs with commercial potential at a project’s inception that was our focus) delivered either by telephone or email, led in many cases to a claim that this was not really what a CRC was involved in (e.g. from a resources-based CRC that, according to its annual report, did have projects with commercial outcomes, “I should point out that we have a foot firmly planted in the ‘public good’ part of the spectrum, and much of our research is not intended, and not able, to be commercialised”). The issue was also raised during the pilot testing of our survey questionnaire. In the introduction to the pilot draft it was stated that “... we are interested in R&D projects that have a concern with the creation of “commercialisable” outputs (e.g. in the form of new materials, products, technologies, or processes). We are defining this broadly to mean that a project has been established with the intention of receiving some financial return on the investment made.”

However, this definition did not sit well with a number of the pilot test respondents, so it was further broadened to what we believed to be the broadest possible perspective on commercially-focused projects. Clearly, and contrary to our initial expectations, we had struck a sore point among CRC managers! After there had been much debate about the importance of commercialisation for the CRCs, and policy changes to encourage a greater focus on it, the question arose as to why the issue should be so problematic.

It is not our intention here to generally engage with policy debates on innovation in Australia, which is a large, complex and messy area beset with a cacophony of discordant voices promoting specific interests (e.g. governments with economic growth and firms with the capacity to realise profits). Rather our aim is to focus on one relatively recent aspect of these debates: the increasing policy emphasis on the commercialisation of knowledge produced by public sector organizations such as universities and public research agencies within the framework of Australia’s national innovation system, and this focus encompasses a cast of actors in an ongoing drama wherein the Commonwealth Government sees itself as a key orchestrator (or, to continue with the dramaturgical analogy, director of the play).

The Context: National Systems of Innovation and the Emergent Regime

Innovation is a term that is widely used, but which has different meanings in different contexts. The term “innovation” (derived from the Latin innovare, to renew) generally means the introduction of something new, such as a new method or device, and can apply to any area of human activity. But, as Layton (1977, p. 203) points out, within the discipline of economics innovation is exclusively seen as an economic act involving the introduction of a new product or process into the market, and it is this usage that has become dominant in contemporary policy debates. Thus, Freeman (1977, p. 229) emphasises the specific nature of the economists’ approach by drawing on Schumpeter (e.g. 1939, pp. 87 - 88, depicting innovation as “.... the setting up of a new production function. This covers the case of a new commodity as well as those of a new form of organization such as a merger, of the opening up of new markets, and so on. ... we may express the same thing by saying that innovation combines factors in a new way ....”) to define innovation as the first commercial application of new products, processes, or systems of organization. It is in this economists’ perspective that we can see the roots of a policy interest in commercialisation. But how exactly does innovation occur in an economy? Recent studies of innovation have stressed that it most often involves networks of relationships and linkages within and between organizations.
A major approach to the study of innovation that emerged in the late-20th century, largely in response to a recognition of the growing incidence of interorganizational linkages in R&D and technological innovation, has been the adoption of a systems perspective. According to this, innovation in an economy cannot be understood simply in terms of the initiatives and actions of individuals (such as inventors) and single organizations (such as firms). Rather, what is critical are the complex interactions of firms and other organizations within their environment. A particularly influential systems approach, widely adopted in both academic and policy contexts, is that of “national innovation systems” (Lundvall, 1992; Edquist, 1997). This approach is based on the recognition that:

“Innovation processes occur over time and are influenced by many factors. Because of this complexity, firms almost never innovate in isolation. In the pursuit of innovation they interact with other organizations to gain, develop, and exchange various kinds of knowledge, information and other resources. These organizations might be other firms ... but also universities, research institutes, investment banks, schools, government ministries, etc. Through their innovative activities firms often establish relations with each other and other kinds of organizations; therefore it does not make sense to regard innovating firms as isolated, individual decision-making units” (Edquist, 1997, pp. 2 – 3)

Thus national innovation systems (note that such systems exist at different geographical levels, from subnational to supranational, and include “transnational” innovation systems) constitute broad arenas within which the technology-organization nexus is performed, i.e. wherein (a) organizations innovate and interact, and (b) knowledge is produced and exploited by particular actors. As such, these arenas encompass a range of traditions, specific social, economic and political institutions (comprising a distinctive “institutional infrastructure”), as well as government policies, agencies and programs. An early application of this perspective to Australia noted that, in response to dominant structural features of the economy (e.g. “the high degree of government provision of business and social services”), a national innovation system had evolved which was characterised by:

“.... a low level of science and technology expenditure, a high level of government involvement in financing and undertaking research, a low level of private sector research and development, and exceptionally high dependence on foreign technology” (Gregory, 1993, p. 324)

Some of these characteristics may have changed somewhat in the subsequent two decades (e.g. as Garrett-Jones, 2004, has observed business R&D expenditure rose markedly from a low base over the decade from the early 1980s; from around 0.25% of GDP in 1981 to 0.85% in 1995), but “problems” remain. As a recent review concluded

“Australia’s system grew up in a very different context than it now faces, and it seems ill prepared for the new challenges. .... Australia’s resource mobilisation is poor, and its capital allocation and risk management systems show bias against technological innovation. Large corporations invest little in R&D, and few technologically innovative companies are formed or grow to substantial size. The result is a broken national innovation system.” (West, 2001 p. 38)

Driven by an array of political and economic factors, national innovation systems have been changing since the late-20th century. Within and across these systems, there have been profound changes in the nature of knowledge production and exploitation. In a context of flux and institutional change, marked by the emergence of “entrepreneurial universities” and “entrepreneurial science” (Etzkowitz, 2001), a “new mode of knowledge production” (transdisciplinary in nature, centred around transient organizational forms such as R&D consortia and centres, and focused on research problems defined by industry) is challenging traditional academic forms (organised by academic discipline, conducted within less transient forms of organization such as universities and public research agencies, and focused on research problems defined by communities of practitioners; Gibbons et al., 1994). As part
of this institutional change, the relationships between governments, universities and industry within national innovation systems have been restructured. Etzkowitz and Leydesdorff (1997, 2000) have described the new knowledge infrastructure in terms of a “triple helix model” in which there are overlapping institutional spheres (“with each taking the role of the other”) at the interface of which hybrid organizations and cross-sector networks are to be found. This change can be observed in most developed economies wherein:

“The common objective is to realize an innovative environment consisting of university spin-off firms, tri-lateral initiatives for knowledge-based economic development, and strategic alliances among firms …., government laboratories, and academic research groups. These arrangements are often encouraged, but not controlled, by government, whether through ‘new rules of the game’, direct or indirect financial assistance, or through [other nation-specific measures] ….” (Etzkowitz and Leydesdorff, 2000, p. 112)

This is exactly what is occurring in Australia, as exemplified both by the dramatic rise in university research centres which draw on a wide range of external funding sources and by the CRC Program in which the CRCs are quintessential “hybrid organizations”. As Turpin (1997, p. 255) has observed, while linkages between the universities and industry have existed for some time in Australia, these have become more widespread and formalised so that now “…. for industry, universities are no longer simply a resource for carrying out basic research and producing well trained graduates; they are now often partners in research and development activities and ongoing training programs for technical and administrative staff.”

**Policy Perspectives in Australia**

Two recurrent themes in contemporary Australian policy debates on innovation have been that, firstly, the linkages between the knowledge-creating organizations (mostly in the public sector) and knowledge-utilising organizations (mostly in the private sector) have traditionally been weak (e.g. DEST, 2003a); and, secondly, while Australia is relatively strong in terms of research outputs its capability of commercialising research findings is poorly-developed (e.g. Block, 1991). Recognition of these weaknesses has stimulated a range of government policy initiatives since the 1980s, both to encourage private sector innovation (e.g., through tax concessions, specific industry assistance, and competitive R&D grants) and to strengthen the links between public and private sectors (e.g. through the CRC Program, industry-linked postgraduate awards, and collaborative research grants).

Although Australian governments have funded elements of a science and technology infrastructure since the 19th century (when, for example, the colonial administrations established natural history museums, botanic gardens, observatories, agricultural research establishments, and geological survey organizations), it was not until the late-1960s that a fledgling policy apparatus was established by the Australian Government (i.e. the Science Branch formed within the Ministry of Education and Science in 1968). With the establishment of the first dedicated policy agency, the Advisory Council on Science and Technology in 1972, the Government’s interest in science and technology was made clear by the responsible minister:

“... we have reached the stage where we need to make sure that our national effort is properly balanced and that the resources we are able to devote to development of science and technology are directed to achieve national goals.”

This interest in science and technology was (and remains) instrumental (e.g. public funding as a means to enhance international competitiveness and promote economic growth), but the approach was one of fostering the production of potentially-useful knowledge. Much of the research effort was oriented by the doctrine of a “republic of science” (Polanyi, 1962) with the pursuit of problems “left to the free decision of the individual scientist”. The general expectation, encouraged by public research agencies such as CSIRO (e.g. Moyal, 1979), was that there would be practical pay-offs but, given the particular nature of scientific research, it was difficult to predict how and when; adequate funding was all that
was required for these organizations to operate most fruitfully. Thus, in the period to the late-1970s the policy concern was to ensure that the public-funded science and technology effort was applied to problems of national importance and the focus was on the performance of the infrastructure, notably on its organization, direction and priorities. However, from the late-1970s there was a shift in policy focus towards the technological performance of industry and a growing interest in achieving the transfer of knowledge from the public to the private sectors. This shift was from a science or science and technology policy to an innovation policy, and was initially manifest in 1983 with the introduction of the Management Investment Companies Scheme (to encourage the development of a venture capital market in Australia) and in 1985 with the 150% tax concession for private enterprise R&D. It was during this shift in focus that the problematic nature of the linkages between public sector researchers and industry innovators was first given prominence, as memorably expressed by the claim that science and industry in Australia had become “locked in separate matrices” (Kolm, 1979). A series of policy initiatives ensued during the 1990s to strengthen the links between the sectors, as noted above. But while the policy focus was initially on the encouragement of cross-sector collaboration (to ensure a transfer of knowledge and technology), there has been since the mid-1990s an increasing emphasis on the commercialisation of public sector research (reflecting a trend towards “active technology transfer” noted within US universities during the 1980s; Feller, 1990). Let us now look at how this drama, performed by a changing constellation of actors from both public and private sectors (with a growing importance of private sector consultants), has played out in Australia.

The Rhetoric of Commercialisation in Australia

The notion of “commercialisation” as the central aspect of innovation seems to be ubiquitous today in Australia. For example, there are now at least two postgraduate qualifications in commercialisation supported by dedicated university-based centres (i.e. the Australian Centre for Commercialisation Education at Melbourne University Private and The Education Centre for Innovation and Commercialisation at the University of Adelaide), there is an Australian Institute for Commercialisation, and there has even been the development of an instrument to measure the commercialisation performance of public sector organizations (DEST, 2004). Furthermore, the Commonwealth Government’s current innovation policy (announced in the 2001 statement “Backing Australia’s Ability – Building our Future through Science and Innovation”) states that one of the three key elements in the innovation process is the acceleration of the commercial application of ideas generated through R&D and other inventive activities. This latter policy direction is supported by a directorate within the bureaucratic apparatus, which has reinforced the importance of commercialisation:

“One of the key ways that publicly funded research can have a productive impact is through it being translated into marketable products, processes and services. This is an important aspect of the Australian research and innovation system. Bringing research results and outputs to the market in a timely and effective manner helps demonstrate the relevance and value of that research, ensuring that it contributes to the economy and to the broader community.”

A series of reports, commissioned by various commonwealth government agencies to contribute to innovation-related policy and mostly produced by private sector consultants, has been released since the early-1990s addressing inter alia the issue of commercialisation. In these reports, which have been influential in informing government policy and associated policy pronouncements, two main themes have been advanced. The first is that although Australia research capability is relatively strong, it has not performed well in commercialising local inventions and the outputs of domestic R&D. This argument was advanced forcefully in 1991 by the Report of the Task Force on Commercialisation of Research (a report which adopted a revealing title: “Bringing the Market to Bear on Research”; Block, 1991). The establishment of that Task Force had been announced in an Industry Statement and its task was to investigate ways of improving the commercialisation of Australian research. The problem to be addressed was clearly stated in the terms of reference:
“It is recognised that many exploitable ideas and discoveries have not been proceeding through the commercialisation stage and many needs of Australian industry are not being adequately researched. For these reasons, Australia is not deriving all the benefits it might from its strengths in research.” (Block, 1991, p. 31)

More than a decade later, another government report (DEST, 2003a, p. 3) re-stated this theme:

“While much of Australia’s industry research may be the world’s best, it is of limited value unless it successfully enters the commercial market and those commercial opportunities are maximised for the good of industry, institutes and the community at large. It has been a recurrent theme of major reports into Australian research that the commercialisation activities are handled poorly. An entire re-orientation of commercialisation processes and methodologies is demanded.”

This first theme underlies the second main theme that public funded research organizations (e.g. the universities, CSIRO and the CRCs) should become more involved in the production of commercialisable outputs. The Block Report, arguing that public sector research should be more aligned to the needs of industry and more focused on commercial outcomes, put the case as follows for universities (p. 26):

“The Task Force believes that higher education institutions should demonstrate an increased commitment to commercialising research intended for economic outcomes and develop relationships with companies to facilitate effective exploitation. One approach would be to ensure that research funding for higher education is more closely related to the end user.”

Associated with this theme is the argument that there have been cultural barriers to engaging with commercialisation in public sector organizations, and that these barriers need to be overcome in order to achieve the required commitment to commercialisation:

“The key internal drivers within universities to research commercialisation are financial. The key internal constraints are remnants of a culture that regarded being involved in commercial applications as somewhat ‘dirty’. This in turn led to inadequate recognition in promotion criteria and rewards for staff who are active in commercialisation activities. In some instances it also impacts on core funding allocations and leads to inadequate funding of services to support commercialisation.” (ARC, 1999, p. 104)

This is a view that has also been expressed of other public funded research organizations (and which has lead to recent policy changes), including the CRCs as was noted in the most recent evaluation of this program (DEST, 2003b) in which it was concluded that “.... the overall performance of the Programme in the area of commercialisation and technology transfer must be seen as disappointing” (p. 76). According to this view, what is required is nothing less than a culture change in public sector organizations (e.g. “There needs to be a cultural change to the way R&D is conducted in Australia”, Block, 1991, p. 2), such that public funded research becomes much more market focused. Universities, it is claimed, “.... have a larger responsibility, and a special capability, to assist in transforming their knowledge into potential fruits – economic and employment growth”; DEST, 2002, p. v)

This theme represents a significant shift in the thrust of government policy on public funded science and technology, as shown in Table 1. While all of these thrusts are concerned to ensure that the public investment in science and technology is directed towards the economic goal of national wealth, it is only the latter thrust that promotes the engagement of research performers with the market. It is no longer enough for these performers to produce knowledge, or to do so in collaboration with private sector organizations; in this new regime they now have a more direct role in translating research into wealth for the nation.
Table 1: Shifts in Science and Technology Policy in Australia 1980s to 21st Century

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<th>Act</th>
<th>Script = Policy Thrust</th>
<th>Example Policies</th>
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| I   | Production of Potentially-Exploitable Knowledge: Ensure appropriate S&T infrastructure | ARC Research Grants  
NHMRC Research Grants |
| II  | Transfer of Potentially-Exploitable Knowledge: Ensure effective linkages & transfer mechanisms | CRC Program  
ARC Linkage Grants |
| III | Active Commercial Exploitation of Knowledge: Encourage & support commercialisation activities | COMET Scheme  
Pre-Seed Fund for PSOs |

But while the main policy thrust is towards the active commercial exploitation of knowledge, often portrayed as a more or less linear process (whereby R&D initially produces potentially useful knowledge, usually captured as intellectual property, which is then turned into marketable commodities), there are other voices in the drama counterposing the main chorus line. One such view emphasises the multi-faceted nature of commercialisation processes. For example, the Stocker-Mercer review of greater commercialisation and self-funding in the CRC Program (DIST, 1998) argued that:

Commercialisation is a heterogeneous process that often involves incremental changes in materials, products, or processes. It often involves investment in new equipment, facilities or skills. Its economic impact may arise from the production or investment decisions of only a few firms or of many small producers or users. The time scale from development to application to economic returns may span a few years or be measured in decades. Commercialisation may include, for example: changes in instruments and data interpretation that result in higher recovery of gold from ore or higher quality welding on ships and pipelines; improved product design and quality. (p. v)

Other reports have also noted that there are many channels through which knowledge generated in the public sector can lead to private sector innovation. These channels have been termed “commercialisation routes” (ARC, 1999), which involve a wide range of activities from education and training through to spin-off companies and joint ventures, or more generically “the route to end use” (DEST, 2004). This latter notion encompasses both commercialisation and other forms of knowledge utilisation (“... the transfer of IP or knowledge without the need for any contractual arrangements, and usually occurs via a number of routes such as seminars, publications, the Internet, extension courses, informal networks and staff exchanges”, p. 29). Hence, economic outcomes can be achieved through both forms of knowledge transfer, or through both “direct” and “indirect” commercialisation processes. The most recent consultant report introduced into the arena (DEST, 2005) takes this perspective a step further in “proposing a more comprehensive and realistic framework for understanding research commercialisation and knowledge transfer” by advancing four process models through which public sector organizations can contribute to commercialisation (i.e. generate useful social and economic outcomes through their research activities). The report notes that current government policy supports all four of these processes.

This emergent view leads to the conclusion that there are multiple roles public sector organizations can play in innovation and the realisation of economic benefits from this, not just through direct commercialisation (this latter activity is generally considered to involve the formation of spin-off companies and the licensing or sale of IP). In turn, this view introduces role ambiguity into the discourse, with public sector organizations expected to produce outcomes covering the spectrum of public and private sector interests. Role ambiguity can become problematic for these organizations where it results in conflicts of interest, differences of interpretation, confusion about focus and direction, and tensions between new and emerging research cultures.
Conclusion

What can be seen in the Australian drama is part of broader international change, but it is being played out on a national stage, involving local actors (who may act as agents of transmission for ideas originating elsewhere) and with distinctive local nuances. As indicated by a number of documented trends, changes have been occurring in the activities of Australian public sector research organizations since the late-1980s (e.g. there has been: an increase in the number and variety of linkages with industry, an increase in industry funding of Higher Education R&D, an increase in the number of scientific publications that have joint authors from both universities and industry, a decline in the proportion of HERD that is devoted to basic research, and an increasing involvement in commercialisation activities such as IP licensing, the formation of spin-off companies and equity partnerships). As a growing number of commentators in this country have argued, these changes have significant implications, and raise major risks, for the organizations as well as the employees therein (Couchman and Fulop, 2006).

The rhetoric associated with the main innovation policy thrust in Australia, in terms of the themes advanced and the particular language used, is part of what Fairclough (1992) has called the discourse of “marketization”. According to this discourse (which seeks both to persuade and to legitimise change), the culture of public sector organizations should be changed and harnessed more to the needs of the market in order to contribute more directly to the creation of national wealth. The policies introduced appear to have effected some changes in the processes of knowledge production and the nature of the knowledge produced, as noted above. As part of wider international trends, the policies may even by contributing to a global shift towards “closed science” wherein research organizations focus more on knowledge protection and appropriation (Tijssen, 2004). However, there remain differing views in the policy debates on the nature of commercialisation processes and on the diverse roles that public sector organizations play in these processes. Recent empirical research has shown that the relationship between the commercialisation of public sector research and the performance of public sector researchers is more complex than would be suggested by pessimistic commentators (e.g. Gulbrandsen and Smeby, 2005). Recognition of this complexity and diversity opens up the possibility for policies which foster marketization less directly (e.g. continued support for long term basic research in acknowledgement of its importance as a wellspring of new ideas and knowledge). It also reveals the inadequacies in the language widely used in the discourse to describe the different kinds of research activity that occur within organizations. Thus, to equate the commercialisation of research outputs as simply (a) the trading of IP or the creation of knowledge-exploiting ventures such as spin-off companies and equity holdings, and (b) the antithesis of “public good” research (thereby leading to a dichotomy between “public good” and “commercially-focused” research) is far too simplistic. Instead we argue that a new vocabulary is required which takes into account the complex and subtle nature of innovation processes, which involve multiple linkages within and across organizations spanning both time and space, and to which public sector organizations make many contributions.

References

(ARC) Australian Research Council 1999 University research: technology transfer and commercialisation practices. Commissioned Report No. 60 (The Melbourne Consulting Group Pty Ltd). Canberra: ARC.


DEST 2003b Evaluation of the cooperative research centres programme. (Howard Partners) Canberra: DEST.
DEST 2005 The emerging business of knowledge transfer – creating value from intellectual products and services. (Howard Partners Pty Ltd). Canberra: DEST.
(DIST) Department of Industry, Science and Tourism 1998 Review of greater commercialisation and self-funding in the Cooperative Research Centres Programme. (Steering Committee Mr Don Mercer and Prof. John Stocker). Canberra: DIST.
Turpin, T. 1997 ‘CRCs and transdisciplinary research: what are the implications?’ Prometheus 15: 253 – 265.