



14 August 2003

The Inquiry Secretary
Legislative Council
Standing Committee on State Development
Parliament House
Macquarie Street
NSW 2000

Re: Inquiry into Science and its Commercialisation in New South Wales

Dear Sir/Madam,

Please find attached the Australian Business Foundation's response to the Standing Committee on State Development Inquiry into Science and its Commercialisation in New South Wales.

The Australian Business Foundation is an independent private sector research think tank specialising on innovation, new forms of business competitiveness and opportunities from the knowledge-based economy. The attached response to this Inquiry is drawn from research commissioned by the Foundation into issues affecting Australia's future business competitiveness, prosperity and jobs.

The Australian Business Foundation appreciates the opportunity to respond to the Terms of Reference and looks forward to hearing the outcomes of this Inquiry.

Yours sincerely

Joseph Moore
Acting Chief Executive



**Legislative Council
Standing Committee on State Development**

Inquiry into Science and its Commercialisation in New South Wales

Response to the Terms of Reference

The Australian Business Foundation is an independent, not for profit private sector think-tank funded and sponsored by the leading industry organisation, Australian Business Limited. The interest of the Australian Business Foundation in the Inquiry into Science and its Commercialisation in New South Wales stems from the mission of the Foundation—to conduct and disseminate ground-breaking research that advances knowledge and fosters new thinking and best practice on Australia’s competitiveness, prosperity and jobs.

The Australian Business Foundation has produced a body of research work, focusing on innovation, new models of business competitiveness and opportunities in a knowledge-based economy. (For more details, see the website at www.abfoundation.com.au).

This research has produced insights relevant to the Terms of Reference of this inquiry particularly as they relate to opportunities for fostering innovation and the commercialisation of research in New South Wales.

In particular, the Foundation draws on the findings of the studies it commissioned entitled *The High Road or the Low Road? Alternatives for Australia’s Future* by Professor Jane Marceau, Dr Karen Manley and Mr Derek Sicklen at the University of Western Sydney and *Regional Infrastructure: New Economic Development Opportunities for the Hunter, Illawarra and Western Sydney Regions*, an action research project by the Australian Business Foundation. It also refers to the report, *Friend or Foe? Leveraging Foreign Multinationals in the Australian Economy* by Dr Lyndal Thorburn of Advance Consulting & Evaluation Pty Ltd, with Dr John Langdale of Macquarie University and Professor John Houghton of John Houghton Consulting.

Challenges for Scientific Research and Commercialisation in Australia

A key message from all of the Australian Business Foundation’s research is that fundamentally different competitive strategies, based on innovation and knowledge, are vital in the face of an increasingly volatile and globalised business environment. This requires business enterprises to be more productive, nimble, globally connected and capable of continually creating new products and services which are highly valued by customers. This is often termed the “knowledge economy” where intangible assets, like know-how and skills, contribute more to sustained business performance than traditional physical assets of plant and equipment.

In 1997 the Australian Business Foundation commissioned Professor Jane Marceau and her colleagues at the University of Western Sydney to undertake *The High Road or*

the Low Road? study, to provide a picture of Australia's industrial landscape and the challenges faced in the pursuit of high skill, high wage, knowledge-intensive industries.

One of the key messages from this study was an emphasis on the importance of competition based on scientific research and development, commercialisation, innovation, distinctive capabilities, technical know-how and skill. In this context *The High Road or the Low Road?* outlines a number of clearly identifiable structural impediments to the successful commercialisation of research and development in Australia.

In particular Marceau observed the prevalence within the Australian economy of low-tech industries and the small size of most firms placed a downward pressure on Australia's R&D performance and consequently inhibited the take-up of high-risk, high return scientific research.

Further to this, Marceau noted that much of the scientific research undertaken in Australia is dominated by the public sector with the majority of business research and development highly concentrated within a very few major corporations. Recent data from the University of Melbourne¹ and the Australian Bureau of Statistics² indicates that this has changed little with ten of Australia's largest corporations accounting for 17% of total business R&D or 8% of gross national R&D. These figures indicate scientific research in Australia is highly susceptible both to public sector funding reductions and corporate collapse or relocation.

Finally, Marceau found that a gap between research on the one hand and development and commercialisation on the other was indicative of a lack of the production and marketing skills and the scale required for successful innovation.

Marceau's research raises two issues of relevance to the Foundation's response to this Inquiry. Firstly, in the successful commercialisation of scientific research in Australia there is a challenge faced in the scale of operations in comparison to other countries and a danger in the concentration of R&D within a small number of government and private sector organisations. Related to this issue there is a clear need to foster a greater diversification of and increase in the sources of funding for research and commercialisation.

Since *The High Road or the Low Road?* study, further research commissioned by the Australian Business Foundation has provided some fresh intelligence about new approaches to addressing the challenges determined above. Two issues are of particular interest in the context of this Inquiry, namely:

- Fostering research and commercialisation through clusters of high performing industries.
- Attracting investment to New South Wales by leveraging the benefits of foreign multinationals.

¹ Melbourne Institute of Applied Economic and Social Research. 2001. *R&D and Intellectual Property Scoreboard 2001*.

² Australian Bureau of Statistics. 2002. *8104.0 Research and Experimental Development, Businesses Australia*.

Creating Clusters & Centres of Excellence

The Australian Business Foundation's report, *Regional Infrastructure: New Economic Development Opportunities for the Hunter, Illawarra and Western Sydney Regions* recognises the structural adjustments that most Australian regions need to make from being a resource-based or industrial economy to a "knowledge" economy.

In this context it is recommended in this report that regional industry clusters or centres of excellence in high-performing industries should become a focus for policies to foster economic development and build on the skills, strengths and capabilities of New South Wales' regions.

Centres of excellence can be developed around high technology parks and centres of higher learning, or they can be business hubs and clusters of competitive firms that co-locate. Centres of excellence are the focal point for firms to become part of globally competitive supply chains, continually upgrading skills and tapping into new sources of learning and research.

The Australian wine industry is a much quoted example of the success industry clusters can have in the commercialisation of research. The Australian Business Foundation study *Australia's Wine Industry: Collaboration & Learning as Causes of Competitive Success* by Professor Ian Marsh and Brendan Shaw illustrates the importance of competition and clustering in the growth of this industry. Significant industry integration and collaboration in funding research and development for commercial outcomes has transformed the Australian wine industry from small rivalrous competitive firms into a knowledge-driven, globally competitive cluster.

Like that which occurred in the wine industry, the most significant feature of clusters of high technology enterprises and educational institutions is that centres of excellence—through improved knowledge flows and collaboration—constantly create new opportunities for research and development, innovation and commercialisation of ideas, products and services. Clusters go some way to meeting the challenges of scale that can inhibit Australia's economic development. Clustering blends the nimbleness of small firms with the broadly based capacities that would otherwise require much larger organisations and as such offers a valuable mechanism for the successful commercialisation of scientific research.

Attracting Investment through Foreign Multinationals

The contribution of multinational corporations to building Australian business capability and innovative centres of excellence in particular, was explored in the *Friend or Foe?* study. This study provides information on the degree to which multinational corporations (MNCs) influence, either positively or negatively, the growth, capacity and skills of Australian firms. Specifically, the study explores how the interaction between MNCs and local firms affects Australia's capabilities and critical mass; global reach; and skills and knowledge.

The authors conclude that multinationals operating in Australia give more than they take, but the relationship is fragile and tenuous. Consequently, local businesses and policy makers must get smarter to maximise the benefits of multinationals, particularly Australia's access to global knowledge and skills and stronger participation in the commercialisation and delivery of global products and services.

The challenge for Australia's industry policy is to refocus investment attraction efforts in order to increase the size and depth of knowledge-intensive MNC activities in Australia.

Investment attraction policies must aim to effectively embed MNCs within the economy and the national innovation system, not being satisfied with MNCs operating in Australia as sales and marketing outlets only.

To attract MNCs to Australia, policy must move beyond promoting “natural” national benefits such as Asian time zone or English language, as these do not provide cogent reasons for MNCs to locate in Australia rather than in Singapore or Hong Kong. Rather, Governments should seek to leverage Australia’s business culture strengths and promote characteristics that offer real, sector-specific business benefits for incoming firms. This applies particularly to the natural and created competitive advantages of non-metropolitan regions in Australia as well as the particular benefits of global Sydney.

Further policy initiatives are needed to foster the expansion and development of MNC centres of excellence. Centres of excellence emphasise technology development and commercialisation, draw on external services and ultimately serve to anchor MNCs within Australia. Centres of excellence with global and/or Asia-Pacific mandates make an important contribution to the Australian economy and represent a way of attracting a significant R&D presence. Such a focus should replace the emphasis on attracting Regional Headquarters, which often fail to transfer long-term skills and capabilities into the Australian economy.

Australia’s investment attraction efforts should be biased in favour of those investments that explicitly strengthen the country’s knowledge, skill and technology capabilities in a long-lasting fashion and add to our ability to perform as a global centre of excellence in high value-added sectors. A strategic, not blanket, approach to investment attraction is required, so that each investment deepens the local level of expertise and secures it here and this, in turn, acts as a magnet for further investment in a virtuous circle.

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