17 March 2004

Mr David Miles
PMSEIC Secretariat
Department of Education, Science & Training
Location Code 310
GPO Box 9880
CANBERRA ACT 2601

Dear Mr Miles

The Australian Business Foundation, in responding to your invitation to contribute to the deliberations of the PMSEIC Working Group on Emerging Technologies: Growing Technology-Based SME's, has previously forwarded a copy of its latest research study on *Commercialising Australian Biotechnology* by Professor Michael Vitale of AGSM. We wish to add to that submission with the following insights drawn from the wider body of Australian Business Foundation research relevant to the Working Group's terms of reference.

The Australian Business Foundation (ABF) is an independent business research think tank founded in 1997 and sponsored by the leading industry organisation, Australian Business Limited, to advance knowledge and foster new thinking on Australian innovation and competitiveness. Details of the research and operations of the Australian Business Foundation can be found on our website at www.abfoundation.com.au.

The PMSEIC Working Group's terms of reference seek to deepen understanding of the creation of sustained business capability in Australia, particularly from the role played by SME's that successfully develop and exploit emerging technologies for the global market.

The Australian Business Foundation's body of research offers the following key pieces of intelligence to aid the PMSEIC Working Group's deliberations.

A wider angle on technology's role in building business capabilities

There is a strong temptation to equate successful innovation with the production and global sale of new products based on radical technological advances or scientific breakthroughs. Examples like Australia's Cochlear or Resmed come to mind. While such success stories have products which are based on emerging, even transformational technologies, the technology is not the prime reason for the enterprise's enviable performance.

More important is the enterprise's capacity to understand and meet market needs and to solve problems for demanding customers by putting together all the elements needed to build a sustainable and responsive business. Attention to this "market and customer pull" drives faster and more effective commercialisation of the technology.

A current study by ANU into Australian Innovation Systems led by Don Scott-Kemmis, in which the Australian Business Foundation is a partner, confirms the value of the pull through of technology and science by meeting market needs imaginatively. The ANU research suggests that Australia's successful innovations have consistently featured an early and pervasive focus on the needs of customers and an ability to find distinctive solutions to problems. ANU suggests this has been the case for Australia's success in mining and exploration software, defence electronics, scientific and medical instruments and value-added agricultural products like wine.

This problem-solving character of Australian innovation means Australia is neither typically a technology maker nor a technology taker. Rather, we are a technology integrator, generating and acquiring technologies and combining them to develop value-added products and services that solve problems or offer new opportunities to customers.

The implications for PMSEIC's enquiry into growing technology-based SME's is the importance of fostering this ability to innovate by integrating technologies to solve problems in the business world.

This reinforces findings of an earlier 2002 study by Professor Jane Marceau et al of the Australian Expert Group in Industry Studies at the University of Western Sydney, published by the Australian Business Foundation in a report titled *Selling Solutions: Emerging Patterns of Product Service Linkage in the Australian Economy.*

This study illustrated a new pattern of competitive business activity in Australia, an unrecognised form of innovation. It showed both manufacturing and service firms responding to the competitive challenges of tough and crowded markets by creating fresh customised business offerings that link products and services together in diverse ways to provide solutions to the individual needs of their customers. This effort to find value-added solutions for customers allowed these firms to compete against cheaper products, shorter product cycles, faster business imitations and saturated markets.

A case example was given by Chris Bayliss, the Managing Director of Brevini Australia, which is a modern high performing company that both sells and services planetary gearboxes to customers mostly in the mining, agriculture and construction industries in Australia and offshore. Brevini has succeeded in retaining customers and growing revenues by up to 60% in the last two years.

Chris Bayliss tells the story of Brevini taking a hard look at how it could ensure its survival and growth in a climate of intense competition, of customers with little loyalty buying on price and the company's profitability becoming increasingly marginal.

Brevini changed their approach, transforming themselves from a manufacturer of a single product to a unique and customised total package service provider. They first added value to their gear boxes with new features and capabilities. They then engaged further with their customers in understanding the end uses of the gearbox and became involved in problem-solving and design. They then added services to the package, including maintenance and upgrades.

Brevini's journey proved successful, though not easy. It required a cultural shift in management, sales team changes, major efforts to win customer confidence, a commitment to forming alliances and reorganisation of the capabilities of the business so they could consistently offer a high quality total package of solutions to customers.

The imperative of competing on the basis of knowledge

There is mounting evidence from innovation research and case studies that knowledge is becoming an increasingly important factor in business competitiveness and economic growth. This does not just include the knowledge from science and formal R&D, but market intelligence, tacit or technical know-how, knowledge embedded in capital goods, insights from customer and supplier relationships or strategic partners and learning gathered from past mistakes and failures.

The challenge for SME's remains to harness and manage this knowledge, so that it can be turned into distinctive competitive capabilities that these firms can use to devise new products and services that customers worldwide value and want to buy. This applies equally to high tech emerging industries as it does to mature, traditional industries.

The effective management of knowledge has become a vital tool for business to compete in a faster, tougher and more globalised marketplace. This proposition was explored in a recently-released study for the Australian Business Foundation by Dr Richard Hall of the University of

Sydney's Australian Centre for Industrial Relations Research & Training, reported in the two volume study, *Knowledge Management in the New Business Environment.*

GPC Electronics, a contract electronics manufacturer based in Penrith, was one case study detailed in Dr Hall's research. GPC designs, manufactures and markets interconnected products and related services for the electrical power, automotive, consumer, communication and contract electronic manufacturing industries, with an impressive client list that includes Nortel, Toshiba, Ericsson, Siemens and Alcatel.

GPC has enjoyed spectacular growth in recent years (revenues have grown at a compound rate of 40% p.a. for the past 7 years) and now employs 450 staff. Such growth in an Australian manufacturing firm is remarkable, especially in the highly competitive global electronics industry. The Australian Business Foundation's research reveals that knowledge and its effective management has not only been critical to GPC's success, but it is a core focus of its company strategy, rather than being treated as a stand-alone independent initiative. Furthermore this 'embeddedness' of knowledge management in organisational policies and practices was a consistent theme among successful case study firms.

Like many Australian enterprises, GPC realised that it could never compete in a globalised, fast-paced world economy as a high-volume, low cost producer. GPC needed to distinguish its products and services by harnessing knowledge, in particular, market industry knowledge, market intelligence, process knowledge and supply chain knowledge. These knowledge-intensive products and services are more attractive to customers and can command a premium price, which gives GPC a competitive edge.

Firms pursuing such a strategy compete on superior use of knowledge – of markets, customer preferences and needs, industry trends, product capabilities, to name a few. Most of the knowledge needed by GPC tends to relate to industry and market trends and customer needs. GPC's managers see the relationship with a customer as a partnership, from which develops a deep and detailed understanding of the customer's business priorities, strategic imperatives and competitive environment. This close-contact, collaborative approach allows GPC to gain a key strategic advantage over its often larger global competitors, because it understands and can respond, even anticipate, its customers' needs more effectively.

Effective knowledge management also allows firms to be nimble and receptive to change. The entire dynamics of the contract manufacturing industry are prone to change every six to twelve months. Given this pace of change, GPC's key management issues tend to be strategic rather than operational, with the aim to rapidly adapt to customers' current specifications and to anticipate customers' future demands.

The study highlights the value of effective management of the knowledge and innovative ideas of individuals in the organisation. Innovation comes primarily from GPC's mid-tier professional ranks, with excellent project management the main focus. GPC sees its main competitive advantage in terms of its capacity for superior management of projects for customers based on a high degree of customer involvement and rigorous, systemised procedures and processes.

GPC acquires most of the new knowledge it needs through professional and industry bodies and associations. These associations provide firms in the electronics industry with an opportunity to develop a critical mass and an effective networking and knowledge sharing community. Utilising the 'know-who' is an integral part of effective knowledge management for GPC.

By harnessing organisational and individual knowledge, GPC Electronics is able to respond effectively to the challenges posed by rapidly changing markets and advances in technology and stay ahead of the pack.

Critical success factors in high performing Australian industries

The most significant case example of a successful Australian growth industry examined by ABF is that of the wine industry, documented in *Australia's Wine Industry: Collaboration & Learning as Causes of Competitive Success* by Ian Marsh and Brendan Shaw, May 2000.

The study found that industry-wide collaboration and linkages facilitated three significant changes in the wine industry:

- adopting a global business orientation;
- developing superior marketing capabilities and so becoming market-led, not producer-driven; and
- fostering and diffusing technical developments and innovations.

This collaboration, according to Marsh and Shaw, took hold through various industry champions, institutional arrangements, industry organisations and collaborative planning mechanisms like Strategy 2025, which documented the vision of what the wine industry could become and set the necessary objectives and targets.

A crucial reflection from this study was that the process of collaboration was not orderly, centralised or sequential. Collaboration was a more chaotic product of visionary leaders, responsive and capable firms, practical programs, negotiated agreements, government regulation and standards and unplanned opportunities capitalised on. These characteristics are also emerging in current work being done by the Australian Business Foundation and the Australian Stock Exchange, comparing the success factors for wine, mining and listed property trusts, as three examples of Australian growth industries at different stages of development.

In the case of the wine industry, collaboration was the means through which knowledge enhanced competitive performance, specifically in terms of disseminating and realising opportunities for export and for innovation.

The implications for the PMSEIC Working Group is that the wine industry case study highlights the importance of programs and institutions that foster knowledge flows and connections between individuals, so that market signals can be married with technological developments to guide business formation and successful performance.

The key conclusion the Australian Business Foundation draws from these research insights for action by policy makers and business leaders is to better balance current priorities for increasing the supply of research, science and technology with programs to deepen Australia's business capabilities and opportunities, especially for SME's. Attention needs to be paid to programs that help companies, particularly SME's, to absorb and convert new knowledge and skills into feasible, needed business offerings that are attractive to customers worldwide.

The Australian Business Foundation trusts that the foregoing distillation of key messages from its research can make a useful contribution to the PMSEIC Working Group's understanding of business capability-building through support to technology-based SME's.

If you wish to clarify anything or source more detailed information on Australian Business Foundation research, please contact me on Ph: (02) 9458 7438 or email: foundation@australianbusiness.com.au.

The Australian Business Foundation appreciates the opportunity to assist in this important initiative.

Yours sincerely

Narelle Kennedy
Chief Executive