



## Chief Scientist

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Committee Secretary  
Standing Committee on Science and Innovation  
House of Representatives  
Parliament House  
CANBERRA ACT 2600

Dear Sir/Madam

### ***The House of Representatives Standing Committee on Science and Innovation Inquiry into pathways to technological innovation***

I am writing to you to provide a submission into the aforementioned inquiry. This inquiry presents the opportunity to reassess elements of what needs to be done to further develop Australia's innovative potential.

I concede, it is not an easy matter to convert ideas into reality. It is a pathway of risk reduction in stages, with many obstacles. Positive progress demands inter alia, a skilled workforce.

The development of a risk savvy workforce that can assess technology development is a key element in ensuring a project's success. The key to having such a workforce is through a strong science base where the skills needed to conduct such risk evaluation are developed.

Through the undertaking of world class research, training occurs along the way. Industry relevant skills are developed that:

- allow one to determine where the leading edge is;
- can be applied to problem solving; and
- contribute to the ability to evaluate alternative pathways.

To reinforce this view, the recent Australian Bureau of Statistics (ABS) Report "*Innovation in Australian Business*" indicated three key factors inhibiting innovation, namely; direct costs being too high, existence of market related barriers and lack of skilled staff.

Of these three elements, Australia's Science and Innovation system given the right encouragement is well placed to make a positive impact through the development of a highly skilled workforce.

Also, as we have seen in the recent report by the Productivity Commission *Economic Implications of an Ageing Australia*

Assuming the average labour productivity performance of the past 30 years, per capita GDP growth will slump to 1.25 per cent per year by the mid 2020s, half its rate in 2003-04.

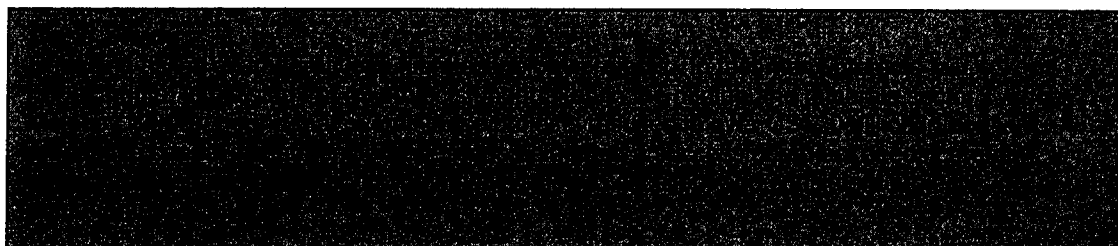
It has therefore never been more important, to plan for the future and further develop a skilled workforce to take advantage of and lead innovation across all industry sectors. A highly skilled workforce is also essential if industry is to make the necessary investments in technological innovation.

The public investment in R&D does of course, through experimentation, provide a cadre of persons with creative, diffusion and absorption capacity who are skilled in discerning what does and does not work. We must also ensure that the skills that our investment into R&D brings to the mix are married with business skills focussed on industry needs (another factor identified in the ABS survey).

This is an integral feature of Australia's innovation system that is highly valued by industry and needs to be fostered. Our investment in publicly funded R&D needs to take account of the long term consequences of such an investment and the spillover potential to the broader economy.

Taking this one step further, acting to legitimise the role of our higher education sector in providing outreach activities to the broader community (including industry) is also to be encouraged. Again the ABS survey reinforces this proposition by identifying that innovating businesses source their "knowledge or abilities" to innovate from within 100 km of their business location.

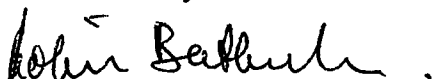
Another aspect that I would like to touch on is how we might foster a more successful approach towards technology development in Australia through the development of pilot/demonstration activities. In doing so, we need look no further than the minerals industry for guidance.



This case study clearly identifies that in high technology projects, it is necessary to develop pilot projects to bring a realistic perspective to research findings. It is also evident that partnerships between the strategic R&D providers and companies need more encouragement.

I leave you with the observation that there is overwhelming evidence that those companies that innovate fare much better than those that do not. In developing a culture that supports innovation and develops the skills of our people we leave behind the legacy of an innovation system that provides lasting value to future generations.

Yours sincerely



Robin Batterham

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<sup>1</sup> Definition of Failure: goes 10% over budget, starts up over three months late; or takes more than 12 months to reach 85% capacity (E. Merrow and M. Yarossi, "Managing Capital Projects. Where Have We Been - Where Are We Going?" Chemical Engineering, October 1994, 108-111)

<sup>2</sup> Twigge\_Molecey, C 2003. Knowledge Technology and Profit. Proceedings of Copper 2003, The Fifth International Conference, Volume 1 - Plenary Lectures, Economics, and applications to Copper, Lagos, G Sahoo, M., and Camus, J., editors. CIM-Metsoc, Santiago, Chile, November 30 - December 3 2003, 41-57.