Mr Gary Nairn, MP
Chair
House of Representatives Standing Committee on Science and Innovation
R1 Suite 116
Parliament House
Canberra ACT 2600

Dear Mr Nairn

INQUIRY INTO BUSINESS COMMITMENT TO R&D IN AUSTRALIA

The answers to the three questions being addressed by your Inquiry will vary according to the type of industry being considered. The following comments relate specifically to knowledge-based industries, with particular reference to biotechnology.

- What would be the economic benefit for Australia from a greater private sector investment in R&D?

A century ago, Australia had the highest gross domestic product per capita in the world. The quality and quantity of our natural resources, the grit and determination of our forebears, and the technological innovations which they pioneered had given us the most productive and efficient agricultural and mining industries on the planet.

Today, as we continue to rely on the riches of our mineral and pastoral heritage at the expense of knowledge-based industries, our GDP/head has slipped to around 30th in the world.

We have a choice. Do we continue to rely on our natural resources, or do we arrest our downward slide by building brains-based industries? Biotechnology offers us the unique opportunity to do both - to combine our brains *and* our resources to drive the social and economic transformation of our country.

How can we quantify that opportunity?

A simple guide may be the target agreed by five Japanese government ministries that have combined to invest US$18bn over five years in their national biotechnology strategy. In return, they expect that Japan will have approximately 1000 biotechnology companies by the year 2010. More importantly, they expect Japan's resulting annual revenues from biotechnology to rise from one trillion yen to 25 trillion yen by 2010. That is equivalent to almost AUD$400 billion, around two-thirds of the total GDP of Australia.

An alternative comparator is the US biotechnology industry, which currently has annual revenues of approximately US$27 billion (AU$50 billion), and will reach AU$200 billion in 2010 at its present growth rate. Interestingly, despite doubling national revenues every five years, the number of US biotechnology companies has barely changed, rising from 1200 to 1400 over the past ten years.

What do these figures mean for Australia? Calculated on a population basis, the Japanese figures translate to targets of around 150 companies with revenues of AU$60 billion for Australia by 2010. The US figures would suggest about 150 companies with revenues of approximately AU$15 billion.

An intermediate target, taking into account the fact that the US data exclude medical devices and other industries that we include under the broad umbrella of biotechnology, might be 150 companies with revenues of AU$30 billion. The corresponding employment targets, again extrapolated from the US figures, would be 30,000 core biotechnology industry jobs in Australia and perhaps 70,000 jobs in supporting industries.

Interestingly, we already have about this number of companies, but their revenues are only a fraction of these international targets. Australia's core biotechnology revenues, excluding pharmaceuticals, medical devices, food processing, etc are just over AU$1 billion.

Why is this so? The key difference is size, and particularly the size of our relative investments in R&D. According to recent reports, the average investment in R&D by Australian biotechnology companies is AU$2 million per annum, while that of their US counterparts is US$12 million per annum.

- What are the impediments to business investment in R&D?

Investment in knowledge-based industries can be broken up into several stages, ranging from small pre-seed or business angel investments through intermediate-sized private equity positions to larger public listings.

Again the key difference is size.

Investments by Australian business angels are approximately one-thirtieth (on a per capita basis) of those of their US counterparts. Venture capital investments in Australian biotechnology companies are about one fifth of those in the US. And recent capital raisings from public listings in Australia have averaged AU$15 million while equivalent US companies have raised US$150 million.

The reasons for these discrepancies appear to be partly historic, partly cultural.

Australia's high net worth individuals, our potential business angels, have accumulated their wealth through long-standing investments in resource-based industries. Although generally willing to invest in high risk, high return opportunities, they are less at ease with intellectual property-based industries than natural resources.

Our venture capital community, although now moving more towards early stage investments, still puts 90% of its capital into management buy-outs and other late stage opportunities. Likewise, our retail and institutional investors are far more comfortable with the dividend streams of companies with strong cash flows than the prospective capital gains of knowledge-based industries.

- What steps need to be taken to better demonstrate to business the benefits of higher private sector investment in R&D?

Government has already done a great deal to encourage change.

Schemes such as the Biotechnology Innovation Fund and the recently announced Pre-Seed Funds are providing incentives to early stage investors in biotechnology and other knowledge-based industries. The IIF program, in tandem with START, has had a dramatic impact on the proliferation and viability of start-up companies.

What is needed now is not more direct investment from government, but creation by government of an investment environment that seriously tilts the playing field in the direction of knowledge-based industries. In particular, we need to find ways to provide relief from CGT and other tax barriers to investors in knowledge-based industries, at all stages in their development. These include

- business angels and others making pre-seed investments in knowledge-based companies;

- domestic or foreign funds, businesses or institutions investing in R&D intensive start-up companies (say, greater than 50% budget on R&D); and

- investors (including mums and dads) in publicly listed R&D intensive companies (say, greater than 30% budget on R&D).

There seems little doubt that the ultimate tax revenue derived from the establishment and growth of knowledge-based industries will vastly outweigh any short-term loss of CGT inherent in these proposals.

Yours sincerely

P R Andrews