

## The way forward

It's time for New Zealand to climb out of the cellar before the rest of the OECD disappears over the horizon. By **Bob Gaudie** and **William Giesbers**

RAISING THE EARNING power of our corporate sector by developing innovation-led products is a must. And, as we argued in this column last month, boosting that earning power to be on par with Finland (which is still only in the bottom third of the OECD) will require a major upgrade in funding business expenditure on research and development (BERD) from \$361 million to about \$3 billion.

In our May 'Outspoken' column we launched a survey of *Unlimited* readers. We were looking for your input on how to sort out the tangled threads of BERD funding in New Zealand so that we might identify a strategy to lift BERD to that \$3 billion. If we, as a nation, cannot fund BERD at an internationally competitive level we will continue to sit where we are in the cellar of the OECD, eventually becoming a virtual economic welfare dependency of Australia. Our options are only too clear: bring New Zealand BERD spending up to \$3 billion to at least parallel Finland, or buy a ticket to Sydney.

The first thread to pull out of the survey is the extent of government R&D spending. The Ministry of Research Science and Technology's (MoRST) own report, which we looked at in April's 'Outspoken', offers a rosy picture of government R&D spending in

New Zealand. The Foundation for Research Science and Technology's (FRST) parallel report shows New Zealand manufacturers are generally uninterested — if not unaware — of the combined efforts of government-funded programmes at Crown Research Institutes (CRIs) and universities that are intended to send New Zealand's economy forward on the knowledge wave. The survey responses reflect FRST's conclusions: government R&D spending in CRIs, universities and State Owned Enterprises (SOEs) is not resulting in commercially valuable IP of any great consequence for New Zealand companies — especially SMEs. This situation reflects findings in the US and EU that universities and government-funded laboratories contribute less than 10% of the IP used by companies to produce and market innovative products.

We don't think our survey findings, those of FRST's survey, or the overseas experience will discourage government from funding R&D at CRIs, universities and other SOEs in the belief they are leading to an innovation revolution in the New Zealand economy. This doesn't mean we cannot ask questions about the status of CRIs and SOEs.

trail the world in profiting from innovation. Could there be a connection?

Our survey results mirror the US and EU findings that while universities are minor sources of commercial IP in their economies, they are nonetheless critical to innovation-led economies because universities produce the high-quality graduates that are essential to both development and implementation of commercially profitable innovation. Survey responses are consistent across many categories in identifying manpower as critical for growth of innovation-led products. Furthermore, the need for manpower is most acute at the factory-floor level. We are not yet at the stage where innovation leadership at the PhD level can have a serious impact on our economy. It is interesting to note that while MoRST and FRST have spent a great deal of money chasing the 'killer app' at our universities and CRIs, the real killer apps that have made serious money in New Zealand have come out of non-university and non-CRI IT enterprises.

One of the big constraints on BERD investment in New Zealand is company size. It's in this area that government could

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In fact, some CRIs do pretty well when they have to meet a true commercial bottom line (and not the phoney CRI profit figures). This begs the question: why do commercially successful units within CRIs need to be owned and subsidised by the taxpayer? Perhaps this question might be better put in a different way. The US economy, which leads the world economy by sheer force of innovation, has stringent rules to prevent government from funding universities and government laboratories to compete with the private sector. The economies of the nations at the bottom of the OECD, which includes New Zealand, have no such laws to discourage government from funding its own agencies and government-owned companies to compete with the private sector. The economies at the bottom of the OECD also

help, but does not. On the contrary, the government owns some of our biggest companies — Genesis Power, OnTrack, New Zealand Post, Solid Energy, Mighty River Power and Meridian Energy — as well as CRIs and universities. That means the taxpayer owns a large chunk of the New Zealand economy. But if that chunk was shared out amongst our SMEs — many of which are currently too small to carry innovation — they could become large enough to sustain the cost.

Opening up the earning power of our SOEs and CRIs to the private sector would be a major step forward in increasing BERD spending. The worst that could happen would be to discover some SOEs and CRIs were actually a dead weight on the economy, surviving as government-subsidised monopolies selling from an

out-of-date technology base at a protected profit margin.

The biggest constraint on BERD investment in New Zealand, of course, is money. It costs money to adopt, adapt and create innovative products, then more money to manage the innovation stream to produce a reliable product at a profitable price. And it costs even more to market the product and protect and develop a market once it has been created. The present

Zealand operation to the IPO stage, then a tax-free capital gain would be a much greater incentive than a front-end grant that covered only a fraction of the all-up cost. At present, Inland Revenue would probably be unhappy with a company specifically set up to recover tax-free capital gains. There are good reasons why they should be suspicious of such a setup. But unless the New Zealand government can find the \$3 billion needed to put us on the same growth

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## The R&D source

How often does your company find or source the innovations in its business methods or business products from the following?

	Never	Rarely	Occasionally	Often	Always
Universities	40.5%	24.5%	21.5%	11.0%	2.5%
CRI, SOEs or government departments	47.5%	27.8%	16.0%	7.4%	1.2%
Inhouse research	5.8%	5.2%	23.3%	47.1%	18.6%
Other similar companies	12.6%	20.4%	32.3%	32.3%	2.4%
Suppliers and other trade contacts	7.8%	15.6%	35.9%	35.3%	5.4%

SOURCE: UNLIMITED INNOVATION SURVEY

system of relatively small, front-end-loaded government startup funds is inadequate for many reasons. Firstly, they reward risk taking — gambling, in fact — rather than success making. Secondly, the amounts of money are too small. Think about a Peter Jackson film as an innovative commercial product developed in, and marketed from, New Zealand. This makes \$100,000 to \$300,000 of funding look small, doesn't it? Thirdly, the application and compliance costs are daunting as they're designed around how government-subsidised CRIs and universities apply for money, where time has a different value.

A far better system would be based on rewarding investment for success. Ironically, New Zealand already has in place the tax laws that could, with a little tweaking, provide big financial rewards for investment in innovative commercial products. For example, if an offshore company with innovation management and marketing expertise developed a New

track as Finland, then some drastic financial incentives will have to be developed to bring in those funds from outside New Zealand to invest in the BERD component of our economy.

A system based on rewarding risk through tax incentives for successful companies would also help get around the evident distaste for government involvement in commercial innovation that consistently appeared throughout our survey results. First, when asked, 'What added value is created annually ... from using government research dollars?' the bulk of responses were in the zero category (70% for business methods and 64% for business products). Similarly, the majority of companies in our survey do not use government money to create, acquire or implement innovation (76% for business products and 67% for business methods).

We received a number of comments on the issue of funding BERD in New Zealand. Many comments would allow the company

to be identified, so we have kept them confidential. But one comment summarised the position of the majority of responses so well that we print it here as the last word on where New Zealand companies stand on trying to expand our economy by developing their own commercially profitable products.

"The current strength of business in New Zealand has been achieved not because of, but rather in spite of, the continued ignorance of successive governments. When compared to similar countries (for example, English speaking with a socialist-quasi-democratic political climate), New Zealand is really in the Stone Age because of the repeated failure of government to realise the obvious benefits of encouraging growth of business in New Zealand and the adoption of technology.

"These benefits go much further than simple increased tax takes. SMEs in New Zealand have the ability to affect the day-to-day lives of a far greater number of New Zealanders and take us far closer to full employment than the current government might even dream. Research and development is a significant part of our organisation. It is conducted on top of the daily activities that allow us to pay our bills (an important ethic for our business) and it is not restricted to our current core activities. So far, we have avoided involving government funding because some of the grey areas around ownership of IP, the sheer difficulty of obtaining funding and the obvious bias shown towards previous well-known applicants (especially in the FRST arena)."

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