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Innovation can happen anywhere

Keith Smith and Jonathan West | *September 27, 2006*

IN his recent book, *The Australian Miracle: An Innovative Nation Revisited*, Thomas Barlow, a former ministerial science adviser, notes that during the 1990s Australia enjoyed one of the highest rates of productivity growth in the developed world.

He attributes this rise to Australians' hard work. Australians work among the longest hours in the world, more than those notoriously workaholic nations, Japan and the US. But there's a limit to how much even Australians can work. We believe it's time to turn to a different driver of productivity growth: innovation. The problem is that we have spent almost two decades trying to improve innovation, with little success.

The evidence compels us to accept that in spite of the expenditure of hundreds of millions of taxpayers' dollars, Australian industry is no more innovative than it was a quarter of a century ago.

We don't export a higher proportion of high-value goods, the proportion of our stock market comprised of technology companies hasn't grown, our companies introduce fewer new products and services than those of other countries, and our industries have significantly lower ratios of research and development to sales than comparable economies.

Why? One possible answer may be that we're ignoring what economists have discovered about how innovation happens in a modern economy.

Since about 1980, innovation has been the liveliest field of research within economics. Economists have recognised that innovation is the critical dimension of productivity improvement and that productivity is the vital basis for sustainable prosperity.

Within economics, a relatively new field known as innovation studies, linked with new growth theory, focuses on why some countries and regions are more innovative than others, and what governments might do to improve their performance.

What we've learned in this research contradicts conventional wisdom about innovation as an economic process, and also contradicts several key assumptions that underlie most Australian government policies for innovation.

Most people think of innovation as being about hi-tech, for example, and much of Australian government policy has been directed to commercialising science to create new hi-tech industries.

Indeed, the typical Organisation for Economic Co-operation and Development innovation policy, followed by most Australian governments, has followed a pattern something like this:

First, select a list of leading-edge technologies: the usual suspects are information technology, biotechnology and nanotechnology.

Invest directly in R&D in these fields or provide incentives (particularly tax concessions) for firms to do so.

Provide inducements for researchers to commercialise their discoveries.

With sufficient patience, a new industry supposedly results.

But, the first important finding of recent economic research is that innovation is not concentrated in hi-tech sectors. Statistical studies show that all sectors of the economy innovate and that innovation is widely dispersed across the economy. Innovation is not monopolised by a few supposedly leading sectors, with others dragging along behind.

This is great news for Australia because it means that to become an innovation-based economy we don't have to create new hi-tech industries out of thin air. In fact, in no country do hi-tech industries make up more than about 3 per cent of the economy.

What we do need to do is to add innovation capability to our existing industries.

The second important finding by economists is that within individual sectors, innovation is very concentrated. The typical pattern is that a few individuals or firms innovate, and the rest copy.

Innovation is about entrepreneurship, within existing companies and in new ones. This is also good news for Australia because it means that we don't need to change our culture to make it more change-embracing or innovative.

Our rate of entrepreneurship, of new firm creation, is roughly equivalent to that of comparable nations.

What we do have to do is to focus on helping our few innovators or at least get out of their way.

A third important finding is that innovation rarely begins with a discovery, perhaps made by some boffin in a lab, that is subsequently commercialised.

Rather, what usually happens is that customers tell companies what they need, or firms recognise an unexpressed opportunity, and then companies try to figure out how to make money supplying that need.

This is very important for Australia because it means that we're unlikely to start an industry with science. The science can be important, but it doesn't start the process; it comes after a customer need is identified.

The implication is that Australia is much likelier to succeed in areas in which we already have strong industries and companies - those that already know and understand their customers - than in new ones. We should focus first on adding innovation to our existing industries rather than creating new ones.

Fourth, it turns out that innovation is much riskier, economically speaking, than we'd thought, and that a disproportionate part of the value of innovation is captured by those willing to bear this risk.

In effect, the people who finance innovation gain much of its benefit.

This is also important for Australia. With more than \$1000 billion in privately managed investment capital in Australia, we have more than ample capital to support our innovation needs.

A tiny percentage of this money devoted to innovation would more than supply our needs. The problem is that this money isn't devoted to innovation. How to remedy this?

Much more effective than giving away taxpayers' money would be to tilt the economic playing field for private investors towards innovation as an economic activity and away from other types of economic activity.

Integrating these economic perspectives into our innovation policy would be an essential first step towards an innovation policy that really works - and one that is distinctively Australian.

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