Innovation – are we looking in the right places?

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There have been a number of recent arguments that the definition of innovation should be broadened to reflect what some are describing as unique elements of the Australian industry structure. This is an important debate. Innovation is the foundation stone of continuing productivity growth, competitiveness and prosperity, and will become even more important in the future as we face new constraints to growth. Innovation should recognise the increasing importance of a wide range of business activities that deliver benefits to the modern Australian economy. It should indeed include creativity, and measure inputs, outputs, and impact, as well as both product and process innovation. Innovation needs to be correctly measured if the debate on public support for science and innovation is not to mislead the community.

But to imply, as some economists have recently attempted, that a 'traditional' view equates innovation with research and development (R&D), and that a 'contemporary' Australian view would extend innovation to include almost any strategic or operational business change that delivers new outcomes, strikes dangerous new ground. Such a view gives the impression that the poor level of business investment in R&D in Australia is no cause for concern.

Some policy makers are arguing that the debate around Australia's low business R&D intensity compared to other developed economies is fundamentally flawed – because it centres on a narrow understanding of how companies are undertaking innovative activities within their businesses. This misses the point. The real crux of the problem is that very few of Australia's big companies make the grade as innovative according to any recognised global standard[1]. Having failed the global test, are our major companies attempting to change the standard?

True, much of the current debate on business innovation in Australia is primarily focused on business R&D expenditure. True, business innovation does occur through a range of mechanisms such as business strategy; management practices; process adaptation; logistics management; workplace reorganisation; applications of new technologies; and capital investment in new plant and equipment. To recognise this, the OECD and Australian Bureau of Statistics (ABS) already have measures of non-technological innovation. But there is still ample reason to bemoan the low level of business R&D investment in Australian firms because the evidence is clear. The point is not whether R&D is a true measure of innovation or not; the clear evidence is that firms that pursue R&D are valued more highly, and perform more profitably, than firms that do not[2]. The attempt to shift the debate seems simply to be an attempt to disguise Australia's failure to match the R&D performance of other developed nations.

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[1] Assessing Australia's Innovative Capacity in the 21st Century**,** Joshua Gans and Scott Stern, foreword by Michael Porter, IPRIA.

[2] See for example, 'R&D, Valuation, and Non-Debt Tax Shields: Australian Evidence', R. Brooks and S. Davidson, May 2005; or 'Critical Factors in Successful R&D – An International Comparison', Erskinomics Consulting, March 2003; or 'Productivity and Regional Economic Performance in Australia', Queensland Treasury, Drivers of Economic Growth Project, 2003.

A recent Booz Allen Hamilton study[3] into R&D found no direct relationship between R&D spending and significant measures of corporate success. This is hardly contradictory because their sample studies only firms in the top Global Innovation 1000. The lack of variability in corporate success (which was of course high) is thus hardly surprising! It simply confirms that firms that invest heavily in R&D can experience a threshold effect, in which additional R&D investment produces diminishing returns. There are very few Australian firms that can be classified as such high R&D spenders. The study did show however, that of those 1000, companies in the bottom 10 percent of indexed R&D-to-sales ratios under-perform spenders in both the top 10 percent and the middle 80 percent on gross margins, gross profit, and shareholder returns. Australian data is even more convincing: the thirty of our top 50 R&D spenders for whom time-series data exists had a 5 year weighted average return on shareholders funds of 17.1% compared with 7.7% for the nation's Top 1000 enterprises, more than double[1]!

Likewise, other studies that have found little correlation between business R&D expenditure and the *level of reported innovation* within firms simply confirms that either innovation is misunderstood or misreported, or that R&D is but one – albeit vital – component of possible forms of innovation. To imply that R&D and its subsequent commercialisation is not important is to draw the wrong conclusion.

Very few people will argue with the proposition that innovation, particularly at the enterprise level, takes in a broader range of activities than has been generally acknowledged. Neither will they try to deny that human capital is the driving force behind innovation today and will continue to be into the future. But this must not be used as an argument that spending on R&D can be neglected – this is equivalent to an irresponsible parent starving his child.

In fact, the innovative capacity of firms *is* very much dependent on their human capital. This not only requires better education and training systems per se, but also requires a significant general research and development capacity and base in order to produce the people that can really make a difference by way of understanding and adaptation of both domestic and overseas technologies. Information and communication technologies are prime examples. Given the increasing global competition for skills, a strong domestic R&D base will be crucial to the future of existing high technology based companies, and for the future growth of new and emerging companies that are going to provide the jobs growth.

Some in industry have recently argued that international comparisons should not apply to Australia's laggard performance in R&D investment because of structural differences in the make-up of business from country to country. The case of Finland and Nokia is frequently cited i.e. Finland leads the world in business investment in R&D because its industry contains technologically based companies like Nokia.

It might be correct to claim that certain characteristics of the Australian economy – including the relatively large size of service industries, the relatively small size of

[3] 'The Booz Allen Hamilton Global Innovation 1000 - Money Isn't Everything', Barry Jaruzelski, Kevin Dehoff, and Rakesh Bordia, **strategy+business** issue41, Winter 2005

defence and high-technology manufacturing, and the relative predominance of small firms – mean that businesses in Australia will tend to innovate in ways other than through traditional R&D. But it is precisely why governments must play a policy role in industry development, because to neglect innovation through R&D and its commercialisation only serves to entrench the existing industry structures in Australia that seem to forgo the investment in R&D that is desperately needed but goes unrecognised by them.

How easy it is to confuse cause and effect! In 1989, Finland was at risk of becoming an economic basket case because it had lost its Soviet markets. Nokia was a mere rubber goods and forestry company. The Finnish Government's strategic decision that year to begin investing heavily in R&D, and Nokia's well-timed choice to invest in new product innovation, was to create the most robust of the European economies. Finland would still be in dire straits had it adopted the so-called 'contemporary' view of innovation! The Finnish R&D sector in fact provided a pool of new discoveries that were to become the foundations of successful industry restructuring.

The Australian wine industry is a local example of how a global competitive advantage has been built both through investment in R&D and process innovation. Elsewhere, companies like ResMed, Cochlear and CEA Technologies are cases where entrepreneurship has made them a success and incremental innovation is a key component of their future strategy. But it is important to remember that they would have had nothing to work with had a long period of sustained research and development not provided the base on which they have developed, while continued R&D effort remains a feature of their ongoing operations. Absolutely the market should lead, but much of Australia's future competitive position and new job creation will come from boosting its investment in high tech industries.

To assess innovation as simply 'change' breaks new, and dangerous, ground. At the most strategic level, many companies do perhaps see innovation as constant change, to adapt and redefine the nature, purpose and direction of their business. For example, many companies will identify innovative activity as improving marketing and customer relationships to better identify market opportunities and better satisfy customer needs and wants.

This is OK as far as it goes. But to focus on such measures can be misleading at best and dangerous at worst. For instance, the ABS Innovation Survey asks about changes to corporate strategy as a measure of non-technological innovation. Firms that are experiencing difficulties will desperately try to vary their management practices, with corporate restructures, wholesale retrenchments, jettisoning business units or departments. Such changes are then registered as innovation! Similarly when changes to the production process are made which are simply designed to reduce costs, these can also be considered to be innovations under the criteria. Innovation is definitely about change, but should be about proactive strategic change, not reactive, defensive or downright desperate measures introduced as a last gasp to return to some modicum of competitiveness.

Policy measures to improve the innovation environment are vital. Tax reform, and improved workplace relations, infrastructure and regulation, and education and training systems would all be positive. But they place a heavy onus on others, particularly governments, to change the environment.

The real question is this: *what needs to be done to find and incentivise those leaders from Australian industry prepared to find and engage those with novel idesa, particularly those in the research sector, who can help build competitive advantage through innovation?*

The sad truth in Australia is that our large established businesses view universities mainly as a source of graduates that can help ease their skills constraints, and little else. Contrast this with the phenomenal growth of innovative firms in India, China and South Korea, which build upon those countries' vast quantities of graduate engineers and scientists as well as their strong research investments. South Korea has not mirrored the ‘more infrastructure, tax cuts, and less red tape’ policy recipe. Nevertheless it hasn’t stopped Korean companies such as LG and Samsung successfully dominating their global markets through superior ‘innovation’.

If larger Australian established businesses aren’t hungry for ‘traditional’ innovation, or investment in R&D as those of us old fashioned enough to remember it characterise it, many small companies are. These are enterprises that know their markets and have identified niches, but their challenge is often to find the research, technologies, and new developments from which they can benefit, and then establish effective ways of working with researchers and developers.