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Manufacturing

## Manufacturing needs an image makeover

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One of the contenders for most damning national statistic -- one that speaks of an economy at risk of stagnating now the good fortune of a mining boom has faded -- must be the following: that Australians spend more gambling on the Melbourne Cup than the local venture capital industry spends on start-ups in a year.

Investing in start-up stage companies is high risk. The firms spend an extended time in the Valley of Death, where expenses are exponentially higher than any revenues, and most never make it to the other side. Those that do are high-growth, knowledge-driven and highly disruptive.

Proposed changes to the Significant Investor Visa might help address the funding shortfall from local investors, but the gap stems from a broader aversion to risk-taking and entrepreneurship that is visible across many levels of Australian industry.

In Boulder, Colorado, a new start-up launches on average every 72 hours, according to Forbes. In Israel, spending on venture capital is about 30 times the Australian level per capita.

Although Australia is relatively over-represented in publishing scientific and engineering papers and patent applications, research is less often commercialised [into new products](#) [1].

The current Senate inquiry into innovation is due to hold another hearing today as part of its lengthy research on the challenges facing Australian industries from increasing global competition in innovation and science.

The inquiry is looking at how to attract new investment in innovation to secure high-skill, high-wage jobs, and how (whether?) public policy can nurture a culture of innovation and a supportive ecosystem.

In its interim report last week, the inquiry identified various cultural and structural barriers to innovation. It found only 1.5 per cent of Australian companies developed “new to the world innovations” in 2011, compared with 10 to 40 per cent of businesses in other OECD countries.

It cited low appetite for risk and low levels of mobility between business and research. Only about 30 per cent of researchers work in industry, compared with the OECD average of 60 per cent and the United States level of 80 per cent.

As defence and security company BAE Systems notes in its submission to the inquiry, failure will often occur in high-risk endeavours. “The trick is to learn from our failures and not use them as an excuse to retreat from supporting new risky innovative endeavour.”

One of the opportunities that has been largely overlooked in the focus on rebalancing the economy away from commodities exports to services exports lies in the advanced manufacturing sector.

“Manufacturing suffers from an image problem,” says Jennifer Conley, executive director of the Australian Advanced Manufacturing Council.

But where traditional manufacturing industries grew up behind high tariff barriers and eventually became uncompetitive when protection was lifted (textiles, clothing, cars), advanced manufacturing is already competitive in a globalised world: think CSL, Cochlear, ResMed.

Boeing employs 3,000 people in Australia, its largest base outside the United States, making components for several airplane models including the 747 and 777. The international group's president recently said the local operations set the "gold standard" worldwide for manufacturing innovation and development of more efficient products. BAE has 4,500 staff in Australia.

The Boeing and BAE examples help dispel the common misconception that there are no jobs in highly automated advanced manufacturing.

"Advanced industries do provide jobs and these tend to be more highly skilled and higher paying," says Conley.

Research by Brookings shows that research-intensive sectors added almost 1 million jobs in the US from 2010 to 2013, or nearly 18 per cent of the nation's total job growth, Conley says.

"We need a broad community and policymaker appreciation of the importance of high value manufacturing – an understanding of how those who develop the IP (intellectual property) reap the bulk of new wealth in the 21st Century," Conley urges.

Despite a world-class research sector, most intellectual property never reaches commercialisation or matches industry needs. Some of it leaks overseas to take advantage of bigger tax breaks on R&D.

When advanced economies look to find jobs and growth to replace ageing industries, advanced manufacturing -- perhaps with an image makeover -- could be a prime candidate.

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