

Advancing industry competitiveness in Australia

The Academy believes that Australia's productivity and competitiveness relies on an innovative industry sector that embraces research, technological innovation, and local and international collaboration.

Australian industry competitiveness depends significantly on the ability to translate investment in science, research and development (R&D) into economic benefits, and to lift productivity through the uptake of new technology and technical innovations, including efficient capture of new innovations from overseas.

The challenge: boosting industry competitiveness

Productivity is a key driver of prosperity, economic growth and living standards. Innovation linked with collaboration and good management has been shown to directly enhance business productivity.

However, productivity growth in Australia has been flat or declining for a number of years, threatening our global competitiveness.

Contributing to this decline is the fact that, while Australia has a world-class research base, our performance in translating publicly funded research outputs into economic benefits is poor. This is compounded by having less than 40 per cent of Australian firms engaged in innovation in 2016-17 – a number that has been stagnant for several years.¹ This reflects, in part, that there is no innovation without risk, and Australian businesses generally operate in a risk-averse environment. Further, Australia consistently ranks poorly on collaboration, whether business to business or researcher to business.

Lifting our industrial and business productivity through research, innovation and collaboration must be a key priority for Australia's competitiveness.

To achieve this, Australia needs to rethink the way public money is applied to research and a renewed focus on high-technology high-value industries that drive productivity via technological innovation to produce high quality products and services. Diversification of Australia's industry mix is also essential to ensure that our export base is less dependent on the resources sector.

The vision

The Academy's vision is a productive and competitive Australia with an industry sector that actively embraces research, technological innovation and local and international collaboration.

Priority focus areas

Australia can do more to realise the full potential innovation dividend from its investment in science and technology R&D, particularly for Australian industry. Australia has strong competitive advantages in its skills, research base, political and legal institutions and high standards of living. Technological innovation can enable the opportunities from these strengths to be harnessed.

National Industry Innovation Strategy

An overarching National Industry Innovation Strategy will provide a long term blueprint for industry innovation, scientific research, technology development and science, technology, engineering and maths education, supported by effective linkages and incentives. The Strategy will cover policy and practices that:

- » **Build linkages between publicly funded research organisations and industry, particularly small- to medium-sized enterprises (SMEs).** Improving collaboration between business and research organisations is important to foster the translation of science and research into economic benefits for Australia. A range of measures is required for cultural change, including support of technology intermediaries, removing barriers and creating incentives to encourage mobility of people between research organisations and businesses, and establishing or expanding demand-driven programs that enable business to access publicly funded R&D expertise and infrastructure.
- » **Support local and international business collaboration.** Australia accounted for just over 3 per cent of the world's most-cited scientific publications in 2016.² International collaborations are vital to allow Australian firms to access the 97 per cent of high-quality research that is undertaken outside of Australia. Australian firms, and especially SMEs, should be encouraged to build international linkages and participate strategically in global value chains.

1. Australian Bureau of Statistics (2018), *Innovation in Australian Business, 2016-17*

2. OECD (2017), *OECD Science, Technology and Industry Scoreboard 2017 - The Digital Transformation: Australia*

- » **Enhance commercialisation opportunities.**
Start-up and spin-off companies provide an effective vehicle for commercialising research outputs. Commercialisation of research and new technology can be facilitated by the provision of incentives, and support for skills development and transfer, including business management, for start-ups and established SMEs.
- » **Develop seamless financing pipelines to support technology commercialisation.** Poor access to capital markets makes entrepreneurial businesses dependent on constant fund-raising to stay afloat, precluding, in some cases, refinement and marketing of their innovations. Addressing inefficiencies in financing pipelines through enhancing venture capital markets, developing competitive grants to support technologies through evaluation phases, and changing the tax treatment of some employee share options in line with international practice would lead to more successful technology commercialisation.
- » **Enable businesses to adopt advanced technology.**
Technology development and uptake is a fundamental driver of innovation for business. It can drive transformative change for industry, creating new high-tech niche sectors. Harnessing technological advances can enable businesses to innovate, increase productivity, and take advantage of global opportunities, while reinforcing the competitiveness of Australia's existing industry base and nurturing new high-tech high-value-add industries.

The way forward

The Academy has identified the following four key action areas that must be addressed if Australia is to maximise the contribution of technology, innovation and productivity in industry:

- 1. Translating research to business**
Taking full advantage of Australia's world-class research and realising the full innovation dividend for the economy requires significant improvements in the translation of research to business. Many systematic and cultural barriers exist, as well as market failures that can be profitably addressed by government action.
- 2. Incentives to innovate**
Incentivising and facilitating businesses, particularly SMEs, to efficiently adopt new technologies can further lift innovation, productivity growth and competitiveness.
- 3. Local and international collaboration: research-business and business-business**
Improving collaboration in Australia, between businesses and between business and publicly funded research organisations, will significantly enhance innovation. International collaboration is also critically important. Both domestic and international collaboration improves the productivity and competitiveness of Australian technology-based firms.
- 4. Technology adoption**
Technological innovation is key to building industry competitiveness, through increasing productivity and reducing costs, realising commercial opportunities from research investment, and creating new areas of competitive advantage.