



Australian Government  
Department of Industry,  
Innovation and Science

Office of the  
Chief Economist



# Australian Innovation System Report

2016

[WWW.INDUSTRY.GOV.AU/INNOVATIONREPORT](http://WWW.INDUSTRY.GOV.AU/INNOVATIONREPORT)





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We would like to make a special acknowledgement of the contribution of our late colleague, Roger Smith, who was a valued member of our team and the lead author/editor of the *2015 Australian Innovation System Report*.

— Project Team

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## Foreword

With the winding up of the once-in-a-generation mining boom, innovation has once again become a major focal point for policy, as decision makers across the country scan the horizon to identify new sources of growth. To assist with that task, this report provides crucial information on the state and performance of Australia's innovation system. It is worth pausing for a moment to reflect on the remarkable technological and social achievements made possible by human ingenuity.

For much of human history, economic progress was virtually non-existent. The oft quoted words of Thomas Hobbes describing humankind's natural condition as 'nasty, brutish, and short' can serve as a lucid reminder of the human value of economic and social progress. It is only in the last 200 years or so that living conditions improved dramatically, resulting in the doubling of life expectancy. A great deal of this improvement is underpinned by innovations across a whole spectrum of human endeavours.

A key insight from economic literature is that sustained economic growth depends on continuous technological progress, which is underpinned by the accumulation and application of knowledge. A handful of major ground-breaking discoveries — followed by a vast array of subsequent applications, refinements and modifications — have led to the kind of economic growth that has transformed the agrarian societies of a few centuries ago into today's high-tech service-based economies.

We have come a long way on the road of discovery but the journey has not been without cost — mistakes have been made, policies have failed and resources have been wasted. Indeed, it is fair to say that the road to our success is littered with failure. Yet, failure is something from which we can learn, without needing to dwell on it. As we continue on this road, here in the lucky country, we should remind ourselves that Australian living standards are now among the highest in the world.

In terms of what we can measure, we cracked GDP in the 1930s. We know now that knowledge is the basis for what drives growth in our living standards and wellbeing, and that innovation systems transmit and diffuse new knowledge. But production is becoming increasingly knowledge-intensive, networked and digitally-enabled. Businesses invest significant resources in building their knowledge capital and using it as a source of competitive advantage. In some OECD countries, business investment in various intangible assets significantly exceeds the investment in machinery, equipment and buildings.

Obviously, it is hard to measure the transmission and diffusion of something weightless — or as Alfred Marshall famously put it 'in the air' — like knowledge and ideas. We attempt to do this by observing what goes on within businesses, based on asking business owners and managers about their innovation activities. And we extend this by using business performance records to examine the association between what business owners say they do, and their subsequent performance.

Going forward, as more information becomes available, it offers the potential for new insights about the society in which we live, and the opportunities and challenges we face. The value of this information comes not only from a better understanding of the world around us but also from its relevance to making important decisions about the future. This year's report features a number of novel indicators based on data that were previously unavailable.

A well-functioning innovation system requires the participation of a range of actors across the spectrum of business, government, academia and other parts of the community. By continuing to take a systemic view, the report follows in the tradition established in the previous reports as it tries to shed light on a whole range of different aspects of innovation in Australia and our relative standing compared to our peers. It provides high quality, up-to-date information to support policy decisions and stimulate the ongoing national dialogue about Australia's economic future.

A handwritten signature in black ink, appearing to read 'Mark Cully'.

**Mark Cully**

Chief Economist

Department of Industry, Innovation and Science

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