

Innovation in the fourth industrial revolution: To disrupt or be disrupted?

A REPORT BY THE ECONOMIST INTELLIGENCE UNIT,
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Written by

The
Economist

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Forward

As the Fourth Industrial Revolution unfolds, what innovations are in store?

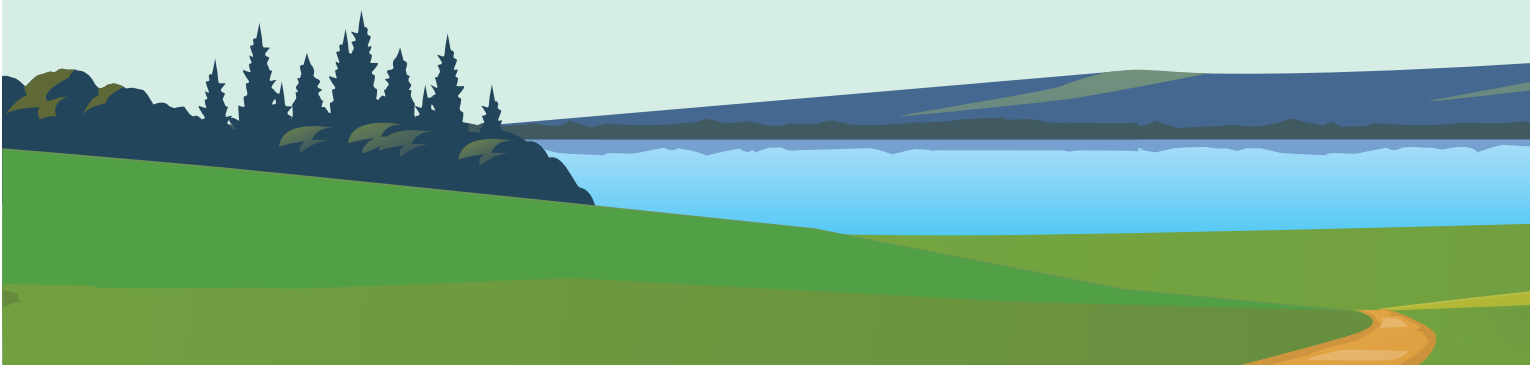
It's inevitable that jobs are going to be impacted as artificial intelligence automates a variety of tasks. However, just as the Internet did 20 years ago, the artificial intelligence revolution is going to transform many jobs—and spawn new kinds of jobs that drive economic growth.

One of the main effects of the Fourth Industrial Revolution is increased human productivity. With technologies like AI and automation augmenting our professional lives, we're able to make smart choices, faster than ever before.

Think about it—just 20 years ago, companies like Google, Alibaba, Facebook, Twitter, YouTube, Uber, Airbnb, Salesforce, Snapchat, Instagram, Fitbit, Spotify, and WeChat did not exist. And let's not forget the millennial generation. They grew up on digital technology, and they now make up more than half the workforce. As consumers, they expect businesses to anticipate their needs and provide personalized support.

Workers can spend more time on creative, collaborative, and complex problem-solving tasks that machine automation isn't well suited to handle. Talent development, lifelong learning, and career reinvention are going to be critical to the future workforce.

The scale and breadth of technological innovations is revolutionizing the way we do business; begging businesses to ask the question: *if I don't take the risk to disrupt, will my business be disrupted?*



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At Salesforce, we understand that we're in the midst of the Fourth Industrial Revolution – bringing an incredible wave of innovation and technology that is radically transforming our economies, our societies and our daily lives. Behind all the amazing technologies are connected customers, who are demanding smarter, faster, always-on experiences. It will be the Trailblazers – customers, innovators, technology disruptors, and global shapers – who bridge the divide between these connected customers and the businesses they love to drive customer success.

This report gathers the opinions of Trailblazers across Australia to highlight innovations, disruptions, and to discuss the future of society in the Fourth Industrial Revolution.



Investing in the future

“Australia should see the fourth industrial revolution as an opportunity,” Jeff Connolly, the chair of the Prime Minister’s Industry 4.0 Taskforce, states on a government website.¹ The numbers support his notion. Digital, broadly defined, can contribute more than A\$140bn (US\$109.8bn) to the Australian economy by 2025, according to research from a consultancy, McKinsey, in 2017.²

The fourth industrial revolution is characterised by its velocity, scope, and systems impact, according to Klaus Schwab at the World Economic Forum.³ He argues that the possibilities of the fourth industrial revolution are enabled by emerging technology, such as artificial intelligence, robotics, and the Internet of Things, amongst others. Potential inequality in adoption meanwhile represents his greatest societal concern.

Taking full advantage of the fourth industrial revolution requires innovation, which in turn requires investment. “If you want to have success in the fourth industrial revolution, you have to put your money where your mouth is,” says Catherine Ball, drone expert and entrepreneur who also goes by the name Dr Cath and has a PhD from the University of Newcastle-upon-Tyne in the United Kingdom. In Australia, she says the financial services sector is doing particularly well, both in terms of innovation and in investing in the future by supporting scholarships, citing household names such as Westpac and the Commonwealth Bank of Australia.



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- Catherine Ball, drone expert and entrepreneur



Old problems, new ideas

Australia suffers from particular challenges that aren't faced in many Western countries. First, it is a massive country. "Innovation starts with communication, and if you can't be there physically, that is a disadvantage," says Ms Ball. Second, policies are set at three levels of government (federal, state and city), in which there may also be multiple local councils across the city, requiring lots of co-ordination. "Being state-based is part of the challenge for Australia," says Ms Ball, who cited major differences in support for the fourth industrial revolution.

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- Andy McFarlane, marketing director of
Telstra Enterprise



The Queensland government, for example, provides stronger support for the fourth industrial revolution than some other states, Ms Ball says, mentioning a state programme supporting the start-up community and universities using the Twitter hashtag #startupstate. “But people don’t realise that it has taken 20 years of planning and investment to get to this stage,” says Ms Ball. “Victoria is trying hard,” she adds, noting that the state has a public sector innovation strategy and last year hosted an innovation festival to promote entrepreneurship and technology progress.⁴ Similarly, New South Wales has embarked on their own initiatives in this area to promote innovation, including the development of skills of the future.⁵

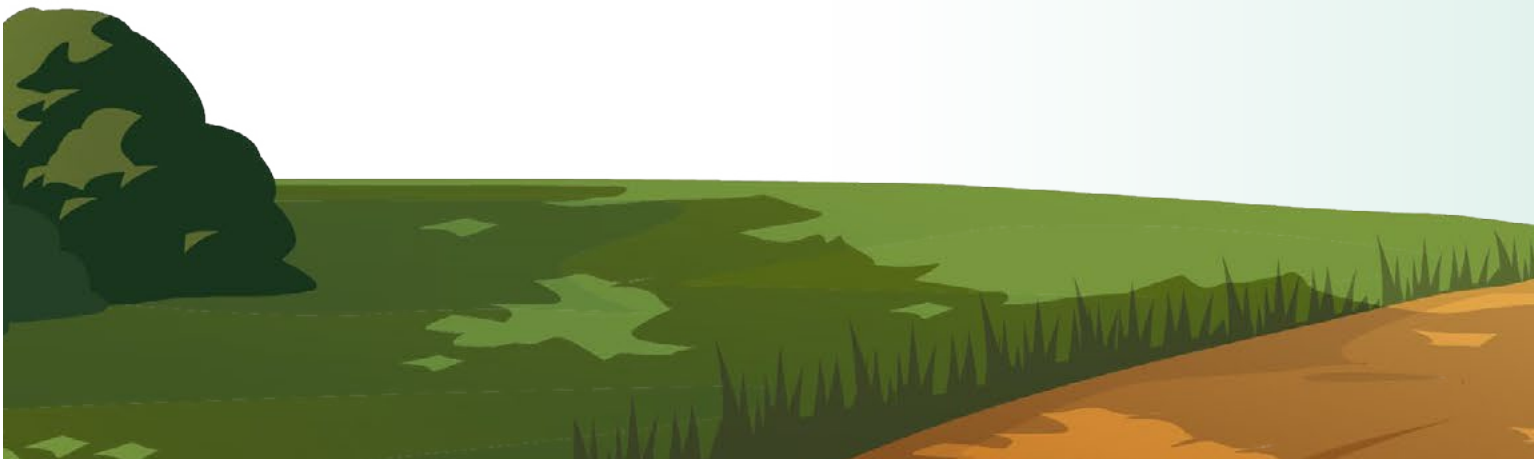
“The government and industry have a role to stimulate skills development that we’ll need going forward,” says Andy McFarlane, marketing director of Telstra Enterprise. Ms Ball believes the solution lies in pushing for greater awareness of the fourth industrial revolution in order to bridge the gap between academia and industry, and cites the Australian National University as a good example in this area. “You also need people to be in the same physical space,” says Ms Ball. Calling start-up and incubator spaces a bit passé, as they typically gather like-minded people, she calls for the co-location of academics and businesses to create more diversity.



Building an environment for innovation

“Without a doubt, the opportunity of the fourth industrial revolution needs to be stimulated in part by start-ups and new ideas, which we can’t expect to come only from the government or existing companies,” says Mr McFarlane. To seize on the potential opportunities, in 2013 Telstra created an accelerator programme called MURU-D, part of which involves co-location between start-ups and the company.⁶ Organisations enrolled in the programme not only get office space, but also access to Telstra’s experts to learn from their experiences in a range of areas, from marketing to product development. In return, Telstra can tap into an ecosystem of innovative companies and ideas. “It helps the Australian economy develop,” says Mr McFarlane. “We see our support as a responsibility that we have and it also brings value.”

Governments, too, have a role in helping innovative ideas get off the ground, says Mr McFarlane. The Queensland government, for example, has put in place favourable regulations regarding drone technology. One reason for this forward-looking regulation is the aviation history of the region. Qantas, the national airline carrier, was founded in Queensland. “Australia was the first to allow the application of commercial drones under the civil aviation system back in 2002,” Ms Ball says about her adopted home country. Another reason is that the state’s large economic sectors—agriculture and mining—both stand to gain immensely from drone technology developments.





Fast forward to today, and Queensland has become a haven for drone technology. Local academic institutions have been applying research in this area for 15 years, and the state has attracted international companies such as Google X from the US and TerraDrone from Japan. Ms Ball, meanwhile, co-created the World of Drones Congress, the world's first significant drone conference, which is held in Brisbane each year, further cementing the potential for the state to be a leader in this fourth industrial revolution technology.⁷

Into the future

By 2020, the World Economic Forum predicts a net loss 5m jobs in 15 major developed and emerging economies, including Australia, as robots replace humans. At the same time, many experts point out that robotics will primarily replace lower-skilled workers and enable people to focus on higher-value-added tasks, thus offsetting the potential negative impact over time.

“The fourth industrial revolution has a long way to go,” says Mr McFarlane, predicting that business models will change across industries with more “things” being connected and services delivered in different ways. An IoT adoption index also illustrates that there are great differences across industries. (Figure 1). The IT and technology industry is furthest advanced, being in a stage of early implementation (6.04) of IoT for external products and services, whereas the agriculture & agribusiness sector lags (2.83) as it focuses on researching the business opportunities for IoT.

“The drone ecosystem and all of the fourth industrial revolution is an opportunity to create jobs.”

– Catherine Ball, drone expert and entrepreneur

Figure 1: IoT adoption varies across industries

Level of IoT implementation for external products and services, by industry



Source: EIU Internet of Things Business Index, 2017

1 <https://industry.gov.au/industry/Industry-4-0/Pages/default.aspx>

2 <https://www.mckinsey.com/global-themes/asia-pacific/digital-australia-seizing-opportunity-from-the-fourth-industrial-revolution>

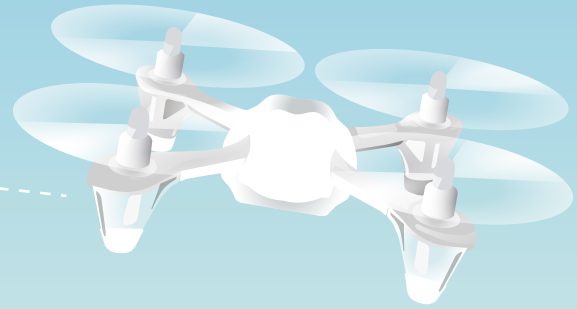
3 <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>

4 <https://www.vic.gov.au/publicsectorinnovation/the-innovation-strategy.html>

5 <https://www.innovation.nsw.gov.au/>

6 <https://muru-d.com>

7 <https://www.worldofdrones.com.au/>



Ms Ball believes the short-term application of drones, for example, will primarily be applied to monitoring (such as agriculture and mining) as well as humanitarian work, such as delivering equipment to remote areas. “Drones suffer from the same problem as 3D printing,” says Ms Ball. “It is a great idea but difficult to apply to everyday problems.”

At the same time, there is an opportunity for innovation fusion, meaning that drones could be 3D printed, which could open up a whole new potential for Australian manufacturing. “The drone ecosystem and all of the fourth industrial revolution is an opportunity to create jobs,” says Ms Ball.



Key takeaways

Australia faces different challenges – and opportunities – than many other countries due to its size, and legislative system, amongst other factors.

Companies have an opportunity to apply emerging technologies to resolve old problems.

The ability to innovate and seize the benefits of the fourth industrial revolution will be crucial to whether companies disrupt or are disrupted.



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