Literature-evidence base: Entrepreneurship

Author: Kylie Cooper

Job and industry disruption continues globally as new knowledge, technologies and business models emerge and are applied in different ways. Technologies such as the internet of things, big data analytics and artificial intelligence are continually evolving, challenging existing products, processes and business models (OECD, 2017). There is a growing amount of research to suggest that entrepreneurial skills have a strong role in providing the skills and networks that build on strong discipline knowledge to enable students to adapt to current and emerging careers in times of change. Further, the application of these skills through partnerships and organisations that create solutions to challenges can lead to significant benefits locally and globally.

Many studies have examined the extent of the impact likely to be caused by disruption on industries and jobs into the future. Frey and Osborne released a study in 2013 indicating about 47 per cent of total United States employment is at risk (Frey and Osborne, 2013). While in Australia, Deloitte identified 13 industries comprising 65 per cent of the Australian economy that are facing significant disruption (Deloitte, 2012). The Committee for Economic Development Australia subsequently proposed a high probability that 40 per cent of Australia's workforce could be replaced by automation within the next 10 to 20 years (CEDA, 2015). A global study from Pearson and Nesta found around one-tenth of the workforce are in occupations that are likely to grow as a percentage of the workforce and around one-fifth are in occupations that will likely shrink (Bakhshi, Downing, Osborne and Schneider, 2017).

Entrepreneurial skills stand out as an imperative during times of disruption with significant national and international reports finding that entrepreneurial skills and mindset are growing in importance and will be key skills in the future (World Economic Forum, 2018; AiGroup, 2018). Further, research has found that enterprise skills can increase the speed to full-time work, and that creative thinking and entrepreneurship are highlighted as essential in sustaining future workforces (Foundation for Young Australians, 2018; Hajkowics, S, Neale N, Cameron L, Horton J, Naughtin C, Bratanova A, Sauer, K, 2018).

There is strong student demand for entrepreneurial opportunities. A global youth survey found 69 per cent of youth dream of starting a business, aligning with the UQ Student Strategy survey finding that over 59 per cent of students view entrepreneurial learning an important part of their studies (Citi Foundation, 2017; The University of Queensland 2016).

At the local level, the demand from future students for entrepreneurial opportunities is likely to continue due to increasing investments at the school level. The Queensland Government committed to state schools offering a digital technologies curriculum that includes coding and robotics, and to extending partnerships with industry, universities and researchers to connect students with innovation (Department of Education and Training, n.d.). Programs such as the Entrepreneurs of Tomorrow aim to provide opportunities for school students to work with a range of experts to build entrepreneurial skills through experiences (Department of Education and Training, 2018). Queensland state school students will also be likely to have an increased global focus, with the expansion of the study of cultures and languages, and international perspectives being embedded across the curriculum (Department of Education and Training, n.d.).

Within the private school sector, significant investments are being made in curriculum development and entrepreneurship and enterprise centres and activities. For example:

- the Cannon Hill Anglican College have opened a multi-million dollar Enterprise Centre https://www.chac.qld.edu.au/enterprise-centre,
- St Paul's School has partnered with River City Labs to launch Australia's first school Entrepreneurs Club
- Ormiston College established an Entrepreneur Challenge program

- Sheldon College Business Education focuses on the key competencies of an Entrepreneur and as such ingrains the model of entrepreneurship within topic concepts
- The Brisbane Girls Grammar School and Brisbane Grammar School Student Entrepreneur Program commenced in February 2019 with forty-two Grammar girls and 19 students from Brisbane Grammar School attended the first session.
- St Aidans Innovation and Design Hub has a total budgeted cost of $4.7 million.

Universities locally and internationally are also investing strongly in their entrepreneurial programs to attract students, staff and partners. This generally includes support for: broad student engagement; early stage idea development; incubator/accelerator programs; different forms of competitions/challenges and co-location initiatives. These are generally complemented by a university commercialisation arm/company.

In Australia, global links are more prominent for some universities, particularly University of Adelaide, University of Melbourne and University of New South Wales. Embedding entrepreneurship curriculum across disciplines has been explicitly promoted by the University of Sydney, with other universities offering credit for experiential learning, such as the RMIT FastTrack Challenge offered as an elective course, and the University of Adelaide eChallenge may be an elective or earn hours for students.

In New South Wales, with funding from the NSW Government, a partnership has been formed between 11 New South Wales based universities and TAFE NSW to establish the Sydney School for Entrepreneurship. With a vision to be one of the world's leading education institutions for entrepreneurs in Sydney, the model is based on the Stockholm School of Entrepreneurship.

Australian universities are appointing senior executives to focus on entrepreneurship. For example, in 2018 UTS appointed Murray Hurps, former Fishburners/Startup Muster CEO to a new Director role supporting startups. More recently, QUT has appointed Professor Rowena Barrett to a new role of Executive Director of the QUT Entrepreneurship Initiative (QUT, 2019).

In addition to preparing students for disruption, investments in entrepreneurship and innovation contribute to the universities vision of 'Knowledge leadership for a better world". Innovation and entrepreneurship go hand in hand, and the links between innovation, economic growth and improvements to quality of life are well documented (Office of the Chief Economist, 2014; OECD, 2015). Innovative economies have been found to be "more productive, more resilient, more adaptable to change and better able to support higher living standards" (OECD, 2015, p. 11).

Governments have responded to the need and demand for entrepreneurship and innovation. The Queensland Government is increasing commitment to the $650 million Advance Queensland agenda – a suite of initiatives designed to drive innovation, build on natural advantages and raise the Queensland profile for investment attraction (Queensland Government, 2019). A draft Advance Queensland strategy has been released, showcasing the ongoing government commitment in this space.

The Australian Government has invested in the National Innovation and Science Agenda, with a focus on: culture and capital; collaboration; talent and skills and Government as an exemplar (Australian Government, 2019). The future of this agenda will not be clear until the formal results of the federal election and the policy platforms are confirmed.

The role of universities in supporting high potential startups is increasingly recognised, as are the benefits for the broader ecosystem. A recent OECD Report highlights a need for greater attention to student and early career researcher startups – due not only to the potential for the generation of new employment opportunities, but also for the benefit of improved connections between universities and industry and the resultant knowledge transfer (OECD, 2019). Startup firms founded by students or academics were found to significantly contribute to commercialising knowledge developed through public research, and further, "startups founded by PhD students and academic researchers are significantly more likely to patent than non-academic startups" (OECD, 2019). The recent Startup Genome report has also highlighted the

importance of startups based on technology breakthroughs and tangible IP, as these are the fastest-growing group globally (Startup Genome, 2019).

The UQ Entrepreneurship strategy highlights the potential to increase partnerships that co-create solutions to local and global challenges. It is timely to progress this aim, as findings from the AiGroup show an increased interest in business in working with universities, and OECD research suggests that proximity to universities matters for industry inventions, with econometric analysis suggesting that proximity to universities has a significant positive effect on the growth rate of industry patent applications (AiGroup, 2018; OECD, 2019). Through these efforts, the university will grow the contribution to the economy, and improving living standards.

UQ is committed to ensuring that students are prepared with the skills, knowledge and experience to contribute to the university vision of knowledge leadership for a better world. Entrepreneurship activities have the potential to make an increasingly significant contribution towards the UQ community taking such a leadership role, and implementing solutions to challenges that provide benefits both locally and globally.

References

AiGroup. (2018). *Skilling: A National Imperative*. Retrieved from https://cdn.aigroup.com.au/Reports/2018/Survey_Report_WFDNeeds_Skilling_Sept2018.pdf

Bakhshi, H., Downing, J., Osborne, M. & Schneider, P. (2017). *The future of skills: Employment in 2030*. London: Pearson and Nesta.

Committee for Economic Development of Australia (CEDA). (2015). *Australia's future workforce?* Retrieved from: http://www.ceda.com.au/CEDA/media/ResearchCatalogueDocuments/Research%20and%20Policy/PDF/26792-Futureworkforce_June2015.pdf

Citi Foundation. (2017). *Pathways to Progress. Global Youth Survey: Economic Prospects and Expectations*. Retrieved from https://www.citigroup.com/citi/foundation/data/p2p_global_youth_survey_full_data.pdf

Deloitte. (2012). *Digital disruption. Short fuse, big bang?* Retrieved from http://www2.deloitte.com/au/en/pages/building-lucky-country/articles/digital-disruption-harnessing-the-bang.html

Department of Education and Training. (n.d.). *Advancing education: an action plan for education in Queensland*. http://advancingeducation.qld.gov.au/SiteCollectionDocuments/advancing-education-action-plan.pdf

Department of Education, Queensland Government. (2018). *Entrepreneurs of tomorrow.* Retrieved from http://education.qld.gov.au/schools/grants/state/core/entrepreneurs-of-tomorrow.html

Foundation for Young Australians. (2018). *The New Work Reality*. Retrieved from https://www.fya.org.au/our-research/

Frey, C., & Osborne, M. (2013). *The future of employment: How susceptible are jobs to computerisation?* Retrieved from https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

Hajkowicz, S. A., Neale, N., Cameron, L., Horton, J., Naughtin, C., Bratanova, A., & Sauer, K. (2018). *The innovation imperative: Risks and opportunities for Queensland over the coming decades of economic and technological transformation*. A Report by CSIRO Data61 for the Queensland Government Department of Innovation, Tourism, Industry Development and the Commonwealth Games. Brisbane, Australia.

National Innovation & Science Agenda, Australian Government. (2019). *Boosting innovation and science*. Retrieved from https://www.industry.gov.au/strategies-for-the-future/boosting-innovation-and-science

OECD. (2015). *The innovation imperative: Contributing to productivity, growth and well-Being*. Paris: OECD Publishing.

OECD. (2017). *OECD science, technology and industry scoreboard 2017: The digital transformation*. Paris: OECD Publishing.

OECD. (2019). *University-Industry Collaboration: New Evidence and Policy Options*. Paris: OECD Publishing.

Office of the Chief Economist, Department of Industry, Australian Government. (2014). *Australian innovation system report 2014*. Retrieved from https://www.industry.gov.au/Office-of-the-Chief-Economist/Publications/Documents/Australian-Innovation-System/Australian-Innovation-System-Report-2014.pdf

Queensland Government. (2019). *Advance Queensland initiative*. Retrieved from https://advance.qld.gov.au/our-vision.aspx

Queensland University of Technology. (2019) *High hopes for new entrepreneurship role*. Retrieved from: https://www.qut.edu.au/news?id=139817

Startup Genome. (2019). *Global Startup Ecosystem Report 2019*. Retrieved from https://startupgenome.com/reports

The University of Queensland. (2018). UQ Student-Staff Partnerships 2018–2020. Brisbane: University of Queensland

The University of Queensland. (2016). *The University of Queensland Student Strategy 2016–2020 White Paper.* Retrieved from https://student-strategy.uq.edu.au/files/453/Student-Strategy_White-Paper.pdf

World Economic Forum. (2018). *The Future of Jobs Report*. Retrieved from http://www3.weforum.org/docs/WEF_Future_of_Jobs_2018.pdf