



# BOOSTING HIGH-IMPACT ENTREPRENEURSHIP IN AUSTRALIA

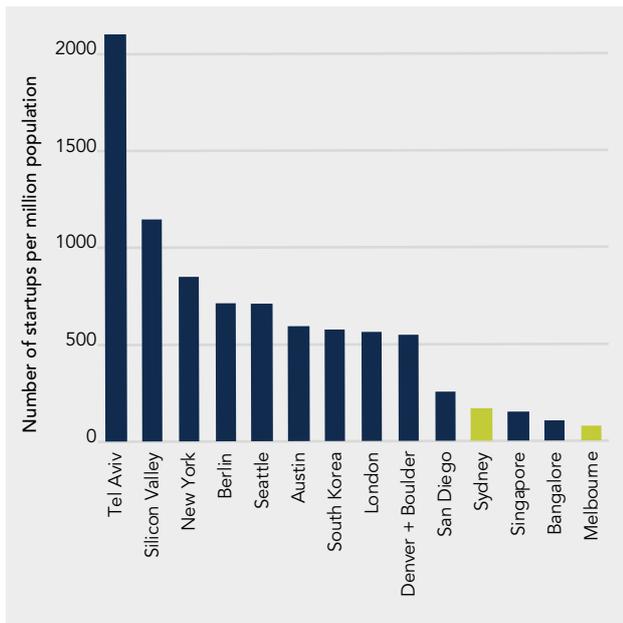
## A role for universities

The global economy is changing, and with it, the skills required to succeed. Knowledge is the foundation of the high-growth industries of the future—but it must be knowledge efficiently acquired, skilfully managed and creatively applied.

On many measures Australia is well placed to rise to the innovation imperative. We perform well in the share of the world’s top 1 per cent of cited research papers in Science, Technology, Engineering and Mathematics (STEM);<sup>1</sup> and place ninth out of 144 countries worldwide for the quality of our scientific research institutions.<sup>2</sup> Yet we place only 72nd for Innovation Efficiency, a measure of innovation output relative to input,<sup>3</sup> and have struggled to replicate the success of the most vibrant startup economies overseas (Figure 1). There are no Australian universities in Reuters’ ranking of top 100 innovative universities.<sup>4</sup>

An important missing link is the entrepreneur, able to translate knowledge into Australian businesses and jobs.

Figure 1: Startups per million population (2013–2014)<sup>5</sup>



## AN ENTREPRENEUR’S WORLD

Entrepreneurs are defined by their attitudes as much as their actions. Those who create the greatest economic impact set out with global ambitions and succeed in building high-growth businesses, with the ability to disrupt large markets using technology. Around the world, these technology-based businesses drive productivity growth, create high-value jobs and boost living standards.

There are many factors that influence an individual’s willingness or capability to be an entrepreneur (Figure 2), including individual personality and broader cultural norms. Yet many other factors—such as practical skills, access to role models, and contact with the startup economy—are shaped by a person’s lifetime experiences in the education system, beginning in early childhood. Recognising this, governments are increasingly adopting policies designed to reshape their education systems into ecosystems for future entrepreneurs (Box 1).

Figure 2: Factors that influence whether an individual becomes an entrepreneur



1 Office of the Chief Scientist 2014, Benchmarking Australian Science, Technology, Engineering and Mathematics. Australian Government, Canberra

2 World Economic Forum, Global Competitiveness Index 2014-15

3 Cornell University, INSEAD, and WIPO (2015): *The Global Innovation Index 2015: Effective Innovation Policies for Development*, Fontainebleau, Ithaca, and Geneva.

4 Reuters, *The world’s most innovative universities*, (2015), <http://reuters.com/most-innovative-universities>

5 StartupAUS, Crossroads, 2014

## BOX 1: LEARNING FROM SUCCESSFUL COUNTRIES

Leading countries with high levels of technology entrepreneurship:

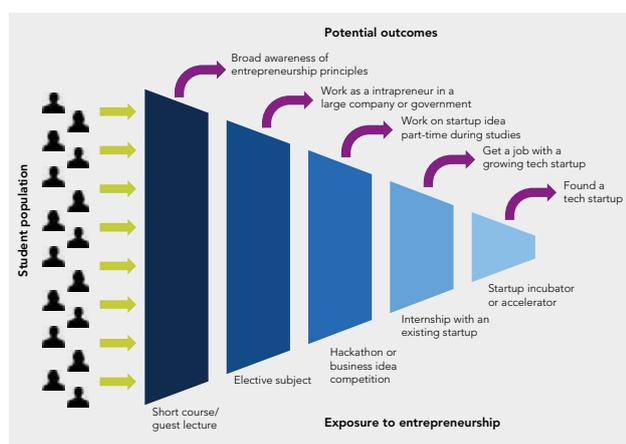
- ▶ make technology entrepreneurship a priority, backed by a national innovation and entrepreneurship strategy that recognises the role of schools and universities as drivers of entrepreneurial culture
- ▶ support the growth of technology companies through policy measures and programs specifically aimed at firms with the greatest capacity for growth; and monitor entrepreneurial activity annually
- ▶ start early, introducing entrepreneurship in schools and immersing university students in a diverse range of entrepreneurship programs
- ▶ encourage young people to think globally by exposure to the best international startup ecosystems and cultures
- ▶ engage with industry and the startup community to develop entrepreneurship programs that are relevant, engaging and accessible, for example a national 'Entrepreneurs in Residence' program in universities.

## UNIVERSITIES ARE CENTRAL

In this rich mix of ideas, the university has emerged as a central concern. Regions with successful entrepreneurial cultures are strongly linked to vibrant university sectors, as hubs for both teaching and research. Stanford and MIT have produced graduates who have gone on to create 39,900 and 25,800 companies based on technology, including pioneers in software, biotech and advanced manufacturing.<sup>6</sup> Entrepreneurship is an integral part of their institutional identity.

Universities receive students shaped by their experiences in schools. They can offer much more to students, and to the nation, if schooling fosters creativity, curiosity and enterprise.

**Figure 3: Opt-in funnel approach to student participation in entrepreneurship programs**



## A WAY FORWARD FOR AUSTRALIAN UNIVERSITIES

To date, Australia has been slow to embrace entrepreneurship as a driver of economic growth. Our policies have struggled to work coherently across school education, higher education and research; or connect actions in these sectors with economic policy goals.

Educators, in particular, have often lacked the incentives, encouragement and resources to approach their role in the very different way required.

Several universities have introduced promising initiatives, but many of the existing programs are too small, do not engage students in STEM disciplines, or do not reflect international best practice (Table 1). This is compounded by limited engagement between universities and industry.

Learning from best practice globally in leading universities, and translating effective programs to the Australian context, are critical steps towards boosting Australia's startup economy. A 'funnel' approach (Figure 3) would maximise the visibility of entrepreneurship in university-life, encourage students to seek out opportunities, and target more resource-intensive programs to those most interested to learn.

Now is the right time for the government and the university sector to work together with industry to bring about a transformation in which high-growth, technology-based businesses become a driving force behind Australia's economy.

**Table 1: Best practice entrepreneurship education in universities**

### Attributes of best practice

- Integral to institutional identity and campus-wide infusion
- Multiple opportunities for engagement
- Experiential, strong emphasis on learning by doing
- Encourages concrete action to pursue ideas
- Based on modern startup methods (e.g. Lean Startup)
- Encourages multi-disciplinary collaboration
- Engages successful entrepreneur alumni
- Connects with outside startup ecosystem
- Available to students when they are ready
- Students self-select into programs based on interest
- Focus on growing the individual rather than their idea
- Entrepreneurship rewarded in academic promotion

These key findings are derived from the report *Boosting High-impact Entrepreneurship in Australia*, prepared for Office of the Chief Scientist by Spike Innovation.

<sup>6</sup> E.B Edwards and C. Eesley, *Entrepreneurial impact: The role of MIT*, (2009); and C. Eesley and W.F. Miller, *Impact: Stanford University's economic impact via innovation and entrepreneurship*, (2012)