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How do Australia's universities engage with entrepreneurship and small business?



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HOW DO AUSTRALIA'S UNIVERSITIES ENGAGE WITH ENTREPRENEURSHIP AND SMALL BUSINESS?

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ABSTRACT

Small to medium enterprises (SMEs) comprise the majority of businesses in the Australian economy. Most are run by owner-managers who have little formal education in business and their level of innovation remains low. Universities offer the potential to enhance both the management skills and competencies of small business owner-managers, and the innovativeness of their firms. This study examines the level of engagement with SMEs by Australia's universities through a study of their education, research and industry outreach programs as viewed through their website information. The findings show that most universities offer courses in the fields of entrepreneurship and innovation, with some also focusing on small business management. Most of these courses are offered via undergraduate or postgraduate degree programs as individual units or areas of specialisation. Several have specialist degrees in the field of entrepreneurship. Around 21% of Australia's universities have dedicated centres in entrepreneurship or small business that undertake research and in some cases management education or outreach programs. Others have research centres that undertake research with a relevance to SMEs, and there are also some research programs or groups that conduct studies into SMEs and entrepreneurship. A smaller number have well-designed industry outreach programs targeting SMEs and entrepreneurs. Overall, while Australia's universities are fairly active in teaching and researching the fields of entrepreneurship, innovation and small business, their level of engagement with SMEs remains limited and is focused on a relatively small number of institutions. In general the "hands on" engagement by academics with SMEs is not a strategic priority within most institutions.

Key words: universities, entrepreneurship, small business, education, research.

INTRODUCTION

Australia's small business sector is a major part of the national economy. Small to medium enterprises (SMEs), which may be defined as those with fewer than 200 employees, comprise around 99% of all businesses in Australia (OECD, 2010a). The majority of these firms have no employees other than the owner-manager.

According to the Australian Bureau of Statistics (ABS) there were just over 2 million small business operators in Australia in 2012. They were operating their businesses across a wide range of industry sectors and the majority had been in business for more than 10 years (ABS, 2013). This reflects the fact that the majority of SMEs are not entrepreneurial start-ups, but well-established business ventures that serve as the foundation of commercial activity throughout the economy.

It is also worth noting that in 2011 the majority of these small business operators had not attended university with only 17% reporting that they had a bachelor's degree. Most had qualifications from vocational education and training (VET) sources. This included around 29.4% with Certificate Level qualifications, and 10.2% with Diploma or Advanced Diploma level qualifications (ABS, 2013).

The most common qualifications held by small business operators are in the field “engineering and related technologies” (approximately 14%), or management and commerce (ABS, 2013). These areas of qualification would potentially benefit from advanced levels of education. In particular the need to enhance the overall level of innovation within Australia's SME sector. This suggests a potential disconnection between the small business community and the higher education sector in Australia.

The consequences of this disconnection have the potential to impact on the overall productivity of the Australian economy. For example, a study by the Productivity Commission and ABS of competition, innovation and productivity in Australian businesses found relationships between firm size and innovation, and innovation and export activity (Soames and Brunner, 2011). Using ABS longitudinal business data, the study found that export behaviour was strongly and positively associated with innovation. Although the challenges of entering export markets was particularly demanding for innovators.

Larger firms were found to be significantly more likely than their smaller counterparts to innovate. The study also discovered a positive relationship between innovation and firm productivity. Small firms that do not innovate were identified as having about a 17% probability of experiencing a decline in productivity. Small manufacturing firms that did innovate were predicted to have a 34% probability of experiencing productivity improvements, while the forecasted rate for goods and services firms was estimated at around 43% (Soames and Brunner, 2011).

Overall the pattern that emerges from this research is the need to enhance the level of innovation within the SME sector. Universities can potentially play a key role in this, and may do so through both education and research activity. This report examines the level of engagement by Australian universities with small businesses and discusses the nature and consequences of this.

AIMS AND METHODOLOGY

To understand the nature of university engagement with small business owner-managers and the wider community of entrepreneurs we undertook a review of the websites of all Australian universities. Our search process was guided by three research questions:

1. What education programs do Australia's universities offer, at all levels (e.g. vocational, undergraduate, postgraduate and executive outreach), that relate to entrepreneurs and small business owner-managers?
2. Which universities have research centres or programs targeted specifically at the study of entrepreneurship and small business?
3. How accessible are these education and research programs for entrepreneurs and small business owner-managers?

All 39 universities were examined via their websites. Our approach was to assume that we were small business owner-managers or entrepreneurs seeking to engage with the universities for either education or collaborative research. Key words were typed into their website search engines such as “entrepreneurship”, “small business management”, “small business”, “small business research” and “entrepreneurship research”. Areas within the websites that dealt with courses and degree programs were also searched. This included a more refined search of the academic handbooks down to a unit by unit level.

In relation to research, we also examined the website's research section and used key words to identify any research centres, programs or individual academics. Many sites had features on “research strengths”,

“research centres and programs”, or “find an expert”. These provided an additional means of identifying the available information.

A series of institutional profiles have been provided in the appendix of this document, with some selected contacts. It should be noted that the data provided here was sourced from the university's websites and it is therefore possible that more activities and programs are taking place within these institutions than is reported here. All care has been taken to ensure the accuracy of this information, but due to the vast amount of activity that takes place within a modern university there can be omissions. For this we apologise in advance.

WHY IS UNIVERSITY ENGAGEMENT WITH SMALL BUSINESS IMPORTANT?

The role that universities can potentially play within a country's national innovation system (NIS) has been recognised in the academic literature (Lundvall, 2007). This has taken the form of technology transfer of research work undertaken within the university sector, to the education of a skilled workforce who can provide the necessary technical and managerial talent to meet the needs of industry. Universities have a potentially important role in assisting new technology-based firms that are generally R&D intensive and require assistance with research and commercialisation (Knockaert, Vandenbroucke and Huyghe, 2013).

In their global report on SMEs, entrepreneurship and innovation the Organisation for Economic Cooperation and Development (OECD), recommended that universities increase their focus on entrepreneurship education. There was also a call for the reinforcement of training in SMEs, and the promotion of greater participation by small firms in local training and education programs to create “local skills ecosystems”. This would be facilitated by the creation of integrated training strategies that combined higher education, vocational education and training, with the knowledge-intensive activities performed by the business and the local SME support programs (OECD, 2010a).

This key role of education and skills building within small firms and the impact that this can have on overall productivity was examined by Agarwal and Green (2011). They highlighted the need for enhancing the management skills of Australia's SMEs in order for them to be better prepared for the challenges facing the national economy into the future:

“Australia has a high proportion of small and medium firms; it is therefore important that the innovation performance of small and medium firms is lifted. The critical role that management talent has in small-to-medium enterprises in driving innovation, competitiveness and growth in the modern economy cannot be underestimated.” (Agarwal and Green, 2011, p. 81)

Of particular importance is the need for such programs to overcome “risk-averse” or “insurance driven” mindsets that serve as impediments to innovation. Australian managers were viewed as in need of a shift in thinking and a change in behaviour within their workforce environments; so as to enhance the level of firm competitiveness and fulfil the true potential of their companies. Australian managers were rated as being only “marginally above average” when examined on international benchmarks. In general Australia was viewed as lagging behind in relation to business management and innovation capabilities (Agarwal and Green, 2011).

In relation to small business, there is a general tendency for Australia's SMEs to underperform across all areas of management. The smaller the firm's size, the less likely the management team will have university qualifications. Evidence was also found for a positive relationship between the level of education and the performance of the business. As noted:

"Based on this analysis, we conclude that, irrespective of the firm size, higher skills and education levels result in better management performance. This again reinforces that education and skills are crucial for all firms and that management talent is vital to achieving success." (Agarwal and Green, 2011, p. 91)

WHAT IS THE HISTORY OF AUSTRALIA'S UNIVERSITIES ENGAGEMENT WITH SMALL BUSINESS AND ENTREPRENEURSHIP?

University interest in teaching and research within the domains of entrepreneurship and small business has grown strongly since the 1990s. This is a global phenomenon and can be measured in the growth of academic journals specialising in these areas, plus the number of academic associations, research conferences and teaching programs that focus on them. In 2012 it was estimated that in the United States there were over 2,200 courses in entrepreneurship across 1,600 business schools, 44 peer reviewed academic journals and over 100 specialist research centres (Landstrom, Harichi and Astrom, 2012).

Interest in small business and entrepreneurship within Australia was pioneered in the 1970s by Professor Geoffrey Meredith at the University of New England.¹ However, he experienced some difficulties getting the new field accepted within the Australian higher education system. For example, one PhD student was denied the right to use the word "entrepreneurship" within the title of their thesis on the basis that this was not an acceptable subject for academic research (Gillin, 1991).

During the 1980s the level of interest within Australian universities in the fields of entrepreneurship and small business management grew strongly. This was partly a reflection of the similar trends taking place across the United Kingdom and the United States. Economic growth in the 1970s had been poor and the levels of unemployment high for most economies. The publication in 1979 of a study into the relationship between employment creation and small business by David Birch from the Massachusetts Institute of Technology triggered a shift in government policy. Birch (1987) found that most new jobs created in the United States over the previous decades had been generated by small firms and start-ups rather than large firms. This led to a renewed interest by governments in small business and entrepreneurship as a means to enhance economic growth and job creation.

Australia followed a similar pattern to the USA and UK with an increase in federal and state government investment in small business and entrepreneurship programs. Universities responded with an increase in teaching and research programs targeting this field (Gillin, 1991). The foundation of the Small Enterprise Association of Australia and New Zealand (SEAAANZ) in 1987 was part of this pattern of engagement between universities and government agencies. Similar trends were found in the UK in this period (Blackburn and Smallbone, 2008).

The development of Australian university programs in entrepreneurship and small business management continued throughout the 1990s, and by end of the last century the majority of institutions had courses or even entire degree programs in these areas (Breen and Bergin, 1999). Today Australia has 39 universities with the majority having business schools that provide courses in entrepreneurship and small business management. Most have academics who undertake research into small business and entrepreneurship, and several have dedicated centres in this area. The following sections of this paper discuss the nature of what entrepreneurs and small business owner-managers need from educational institutions.

¹ Geoff Meredith is a life member of SEAAANZ and was the first President (1987-1989).

WHAT TYPE OF EDUCATION DO ENTREPRENEURS AND SMALL BUSINESSES NEED?

Entrepreneurship, innovation and small business management are all now well established subjects for education and research programs within Australia's university sector. The number of university business schools has also grown substantially since the 1970s, with a substantial increase in research output encompassing entrepreneurship and small business from such institutions. However, there remain many issues over how these subjects should be taught and whether formal courses will actually benefit entrepreneurs (Jones, 2010). This is part of a wider debate over the relevance of these courses to entrepreneurs and small business owners, and the tendency of universities to focus more on scholarly academic research than applied outcomes (David, David and David, 2011).

The type of benefit derived from entrepreneurship and small business education depends on the nature of the business and the previous education level of the firm's management team (Elmuit, Khoury and Omran, 2012). For start-up entrepreneurs there is likely to be less benefit in courses that emphasize formal planning and skills building, and more on learning to adapt to complex and uncertain environments, while strengthening social networking skills and self-confidence (Rae, 2000; Rae and Carswell, 2001; Sarasvathy, 2001; Bergh and Jacobsson, 2011).

In the case of established firms the small business owner is more likely to benefit from skills development, supported by mentoring or coaching, and with action based learning that they can apply directly to their business (Cope and Watts, 2000). They also need education that helps them learn how to manage a network of relationships that encompass such key stakeholders as customers, suppliers, employees, partners, banks and both formal and informal outside advisors. These relationships can be strong and long standing, or weak and irregular, and they can encompass a wide range of local, national and international contacts (Gibb, 1997).

Entrepreneurial learning within the small business has been described as a process of "learning by venturing" whereby the owner-manager learns through performing tasks and activities relevant to their business. The process is reflective and experiential with the owner-manager focusing on examining critical incidents in their business history. They then build on these lessons to guide future action and strategy (Lans et al (2008):

"The predominant contextual learning mode in this environment is that of: dealing with a wide (holistic) task structure; learning from peers; learning by doing; learning by feedback from customers and suppliers; learning by copying; learning by experiment; learning by problem solving and opportunity taking; and learning from making mistakes." (Gibb, 1997)

Many owner-managers do not view formal training and education in management as a high priority. Common barriers to their engagement in education and training have been identified as a lack of time, money, suitable courses, fear of formal learning environments and the inability to anticipate future skills requirements (Webster, Walker and Brown 2005; Lee and McGuiggan 2009).

In a study of small business training in Western Australia, Mitchell (2007) reported a disinterest in attending conventional classroom learning, a lack of awareness as to what programs might be taken, and that many courses were poorly matched to the actual needs of the business owner. Finally, there were concerns over the cost of many programs that were potentially out of the reach of a large proportion of small business owners, particularly the micro-enterprises who comprise the majority of all such firms. This has been reflected in VET programs targeting small business owners where the preference was for more informal, workplace based learning via short courses applied directly to the business:

"The preference of small business, long established in Australian research, for training that is practical, relevant, convenient, low cost and often delivered 'just-in-time' is reflected in this demand." (Kearns, 2002)

Small business owners prefer short, highly focused training programs tailored to a specific industry need. Such programs also need to be flexibly delivered and available at times suitable to the small business owner-manager, usually at a locality close to their place of work. Further, such courses should be learner-centric and not driven by curriculum and accreditation. They also need to be delivered by instructional staff with real-world business experience or who have empathy for small business management problems (Kinnaird and Davis 1998). Kilpatrick and Crowley (1999), in a study undertaken with 181 small firms in Australia, found that owner-managers with higher levels of education were more likely to engage in training, and that informal learning sources were very important. The need to develop a "learning and training culture" within the small business community was a key recommendation of this study.

BEST PRACTICE FOR UNIVERSITY-BASED ENTREPRENEURSHIP PROGRAMS

According to the OECD (2010a) entrepreneurship support programs at university level should be part of an overall strategy that provides top-down support for this activity within the institution. It should be targeted at fostering entrepreneurial mindsets and a positive outlook for new venture creation whether that is in the formation of high-tech or low-tech enterprises.

Academics should be encouraged to engage in actively supporting entrepreneurial activities amongst students, with both mentoring and the sharing of research data playing important roles. The recruitment of academic staff should be focused on those with the right attitudes towards entrepreneurial behaviour and also past experience in business or entrepreneurship support activities.

The OECD also recommends that entrepreneurship and small business activity be given adequate funding for teaching and support staff. The placement of entrepreneurship support programs within dedicated chairs, departments or centres was also recommended. These need to collaborate, coordinate and integrate entrepreneurship programs across faculties and link the university to the broader community. Such centres can have incubators and connections to the start-up and entrepreneurship support organisations.

Education programs targeting entrepreneurship should be integrated within the curriculum and promoted at all levels. Courses should focus on creative teaching methods and cover all aspects of pre-start-up, start-up, growth and consolidation. There should also be outreach programs that work with business support organisations and relevant associations. Research programs should be integrated into these education programs.

In a major review of the academic literature on entrepreneurship education Pittaway and Cope (2007) found little evidence of how the role played by universities as centres of education for entrepreneurs was related back to government policy initiatives. There was also little evidence of how university programs in areas such as commercialisation and industry outreach were formally placed within the context of how entrepreneurship education takes place within these institutions.

Pittaway and Cope (2007) also found that while there was evidence that entrepreneurship education has a positive impact on student intentions to embark on entrepreneurship related projects, there was little evidence to demonstrate actual performance post course completion. For governments seeking to promote entrepreneurship within the wider industry there is a need for better research to evaluate the impact of such courses, and to review both curriculum and the type of teaching faculty who are employed within such

programs. More research was also needed on the benefits of entrepreneurship education to graduate career development. As they noted in their conclusions:

"We do not really know what 'entrepreneurship education' actually is; policy is generally unclear about what outputs are to be created when such education is promoted; and, even if these policy questions were resolved we do not know what works and to what end. Consequently, governments investing in this area need also to invest in research examining entrepreneurship education in order to improve the evidence base, to evaluate the impact of interventions and thereby have a clearer idea of what policies might work more effectively in which contexts." (Pittaway and Cope, 2007, p. 500)

A study of the impact of entrepreneurship education on the performance of entrepreneurs examined 170 people who had either started or were embarking on a business start-up. This research found that education in entrepreneurship enhanced their skills and business performance. In particular the attitudes towards the process of entrepreneurship were enhanced as were interpersonal social skills as well as technical skills. It suggested that entrepreneurship can be taught although it requires content based on case studies, application within real world projects, self-reflection and interactions between students within the learning process. The aim should be to foster openness, self-confidence and trust as well as social capital formation (Elmuti, Khoury and Omran, 2012).

BEST PRACTICE IN SMALL BUSINESS MANAGEMENT TRAINING PROGRAMS

The value of education and training in management skills for small business operators has been reviewed extensively both within Australia and overseas. For example, Storey and Westhead (1994) undertook a critical review of the relationship between management training for small business owners the performance of their small firms. Their review of the existing literature of the time noted that research into the benefits of training to small businesses was constrained by several factors. These included a lack of clear definition as what constitutes training and problems separating workforce training from owner-manager development training. Many studies were considered to be "piecemeal", lacking in objectivity, sound methodology, good underlying theory and a lack of large longitudinal performance data sets.

They noted that most research to that date tended to focus on a few key issues. The first of these was to understand the reasons why so few small businesses engaged in training. A second area of focus was the mindset of the small business owner who often rejects training on the grounds that they lack time, money, awareness of what courses are available, or the ability to determine which courses they should take. Many small business owners may also resist formal training due to past negative experiences with education and training, or inability to recognise their own managerial deficiencies (Storey and Westhead 1994).

In a study of small business training within Western Australia surveys and interviews were conducted with 200 small business owners who had attended small business management development programs. The majority (60%) reported that these courses had "changed the way they ran their business", and 78% expressed a preference for conventional classroom based delivery compared to online only courses (24% preferred this) (Mazzarol and Benjamin, 2011).

In a major review of the extant research literature on small business training, Dawe and Nguyen (2007) concluded that successful strategies designed to address the needs of small business owner-managers were three-fold. First the programs were characterised by having a clear focus on meeting the specific needs of the small business. Second, these programs took a personal approach using locally based facilitators or service providers who were in a position to reach out to small business owners and overcome their reluctance to engage in training. Third, these programs offered flexibility in delivery tailored to the individual needs of each small business.

Dawe and Nguyen (2007) also identified ten factors that contribute to successful training outcomes for small business owners:

1. **Peer Group Mentoring** – small business owners need to be given the opportunity to engage with other owner-managers in forums where they can share knowledge, skills and experiences.
2. **Performance Based Learning** – training programs need to be linked to actions that will allow the small business owner-manager to enhance their firm's profitability, growth or sustainability.
3. **Business Lifecycle Relevant** – small business owners need different skills as their firm moves through different stages of its lifecycle, from start-up, through early and late growth. The challenges of managing a micro-enterprise with less than five employees are significantly different from those of a small business with 20 employees, or a medium sized firm with 100 employees. Training programs need to be adapted to suit these various stages of business development.
4. **Individual Needs Assessment** – programs need to be based on an individual training needs assessment where the owner-manager is contacted personally to assess their specific needs and plan a future learning strategy.
5. **Mentoring Support** – combined with the training should be a program that provides the owner-manager with access to ongoing business-specific support and mentoring via a business service organisation or training adviser.
6. **Flexible Delivery** – the delivery of the training should be designed in a manner that minimises the time they need to spend away from their business.
7. **Workplace Embedded** – the training should be linked closely to the owner-manager's workplace and designed to integrate both formal and informal learning activities.
8. **Affordably Priced** – small business training courses should be either subsidised by government grants to help defray the cost to the owner-manager or reduced in cost via collaboration with other businesses.
9. **Delivered by Relevant Instructors** – the instructors who deliver these small business training courses should be experienced in business and possess the appropriate networks to allow them to engender trust and respect from all business participants, especially Indigenous Australian small business owners.
10. **Developed via a Stakeholder Network** – small business training courses should be planned, developed and delivered following consultations with small businesses and business service organisations.

These ten factors provide an appropriate framework for the design of any small business training strategy. They are consistent with earlier research undertaken in the UK which examined small firms engaged in training projects (Wong, Marshall, Alderman and Thwaites, 1997).

ENGAGEMENT WITH ENTREPRENEURSHIP AND SMALL BUSINESS TODAY

In a study of entrepreneurship and small business education within Australian universities two broad approaches to the design and delivery of programs were identified. The first involved a "traditional process-based" approach and the second a more "experimental approach" that included coaching students to actually experience entrepreneurial activity (Crispin, et al. 2013).

The study by Crispin et al (2013) found that most universities across Australia reported increased interest in Entrepreneurship as a subject of study and that many were offering majors in the field. Most also reported that entrepreneurship was supported by their institutions, although the pattern across institutions was mixed.

The most common courses offered were around “foundations of entrepreneurship”, “business planning” and “small business management”. Lectures, cases and business plan preparation were the most common forms of teaching method used. Much less use was found of “hands on” learning such as field trips, business games or simulations, student-based consulting or internships with SMEs. This led the authors to suggest that there was a dichotomy between “teaching entrepreneurship” and “trying entrepreneurship”. Some of the institutions have sought to blend these approaches with a conventional teaching mode, then having students “try” their skills via internships or projects working with small firms.

Our review of the education and research programs at Australia's universities reveals that there is still a significant level of interest in entrepreneurship with most institutions offering several units within the undergraduate and postgraduate degree programs. However, the level of interest in small business management is much less and relatively few institutions had units in this area. Even fewer have dedicated centres or outreach programs specifically targeted at small businesses. Universities that have VET/TAFE level programs also offer courses in small business management such as the Certificate IV Small Business Management.

Our analysis of the educational programs in entrepreneurship or small business available from Australia's 39 universities in 2014 found that around 95% offers units at undergraduate level and 90% at the postgraduate level. Most of these were focused on entrepreneurship and/or innovation rather than small business management, which was much less common. About 33% offered specific courses at the postgraduate level in entrepreneurship or innovation either as Master's degrees or Graduate Certificate or Diploma level courses.

Only 18% were found to have full degree programs in entrepreneurship at the undergraduate level, and about 10% offered vocational level courses in small business management. The overall pattern that emerged from this review was that entrepreneurship and innovation were now fairly well established subjects in the majority of Australia's universities. However, there was significantly less interest in small business management. This suggests a form of social divide in which the small business area is viewed as something “blue collar” and less professional than the “white collar” area of entrepreneurship studies.

In relation to research and outreach programs eight universities (21%) currently operate dedicated centres in entrepreneurship and/or small business:

- **Bond University** – Australian Centre for Family Business
- **Curtin University** – Centre for Entrepreneurship
- **Flinders University** – New Venture Institute
- **Queensland University of Technology** – Australian Centre for Entrepreneurship
- **University of Adelaide** – Entrepreneurship, Commercialisation and innovation centre
- **University the Sunshine Coast** – Innovation Centre
- **University of NSW** – Centre for Innovation and Entrepreneurship
- **University of Wollongong** – Centre for Small Business and Regional Research

A further five universities have centres that undertake some research and/or engagement that is relevant to small businesses:

- **Charles Darwin University** – The Northern Institute
- **Federation University** – Centre for Regional Innovation and Competitiveness
- **Swinburne University of Technology** – Centre for Enterprise Performance
- **University of Southern Queensland** – Institute for Resilient Regions
- **University of Tasmania** – Australian Innovation Research Centre

Four universities that previously had centres in entrepreneurship or small business have closed them:

- **Deakin University** – Centre for Entrepreneurship, Innovation and Community
- **Edith Cowan University** – Small to Medium Enterprise Research Centre
- **University of Western Australia** – Centre for Entrepreneurial Management and Innovation²
- **Victoria University** – Small Business Research Unit

A further four universities operate research groups or clusters that focus on entrepreneurship and small business, these are: Macquarie University, RMIT University, Southern Cross University, and the University of Sydney.

This shows a reasonable level of interest across most universities in entrepreneurship research with some institutions, having strong outreach programs designed to provide management training, start-up support, business incubation and related services. Nevertheless, most of Australia's universities have only limited engagement with entrepreneurship programs that work closely with industry. Even fewer have strong small business support programs. Given the need within Australian industry for enhanced levels of innovation and management education more could be done by universities to foster entrepreneurship and provide outreach programs for SMEs.

The process of undertaking this research also produced some interesting findings. As noted in the section on our methodology we adopted the position of a small business owner-manager or entrepreneur who might be seeking education or research engagement with these universities. Our general experience is that the websites of these institutions are generally not configured towards this audience. In relation to education, most sites have a focus on enrolling students into undergraduate and postgraduate accredited courses and there were relatively few institutions that had outreach programs specifically tailored for small business operators or even entrepreneurs.

In relation to our three research questions the evidence from this review of Australian universities publicly available website information is that while most have courses that relate to entrepreneurship and to a lesser extent small business, the accessibility of such programs is a potential issue. For example, the majority of courses are designed to be part of a larger undergraduate or postgraduate degree program and students will usually need to meet the educational entry requirements for university enrolment.

As noted in the introduction to this paper, most small business owner-managers do not possess a first degree and may find that they will not be eligible for enrolment. It is also likely that most small business owners will find the need to enrol in a complete degree program challenging from the perspective of the time, cost and delivery mode.

Many universities are seeking to provide more accessible education programs via executive short courses or online programs. Some, like Charles Darwin University have outreach programs working via the Business Enterprise Centres (BEC) network and Australian Institute of Management (AIM) to deliver small business friendly programs. Curtin University's Centre for Entrepreneurship is a dedicated outreach centre focusing on applied learning for small business owners and has an impressive track record in fostering high growth SMEs.

The University of Western Sydney also offers a Small Business Support program that provides training, advice and support for small businesses. This program is funded by the NSW state government and some federal

² CEMI was officially closed as a UWA centre in 2007 but re-established in 2010 as a virtual centre not officially part the UWA research centre network.

government funding. It targets SMEs within the university's primary catchment area of Parramatta, Blacktown, The Hills, Holroyd, Auburn and Fairfield.

Finders University's New Venture Institute is an innovative approach to fostering new venture creation with an emphasis on entrepreneurial start-ups. This is a similar model to the Innovation Centre run by the University of the Sunshine Coast, which has a business incubator focusing on "knowledge-based businesses".

UNSW via its Centre for Innovation and Enterprise is engaged in outreach work, primarily through the placement of university students into participating companies, as well as fostering new business start-ups with student interns. The University of Wollongong's Centre for Small Business and Regional Research also undertakes some outreach services focusing on small business.

The other centres and research groups within the universities are more focused on the pursuit of academic research into the field of entrepreneurship and have positioned themselves as contributing to the scientific study of what entrepreneurs do or how entrepreneurial businesses work. This includes the Australian Centre for Entrepreneurship (ACE) at QUT, which has a robust academic program focusing on academic scholarship, and involving an annual conference in entrepreneurship research exchange. There is also a growing interest in the area of social entrepreneurship and some emerging research activity in this area is noticeable from the websites of the universities.

CONCLUSIONS

The Australian university sector has grown significantly since the 1970s business schools now contain groups of academics who specialise in teaching and research in entrepreneurship, innovation and small business. As noted above, there are also several institutions with dedicated centres in these areas. However, as an academic discipline and field of research the entrepreneurship area remains peripheral. Industry outreach and applied research or support programs are often not given much recognition within universities. Academic career development is more closely linked to the publication of peer reviewed research papers in scholarly journals, than to working with industry, teaching or fostering entrepreneurial start-ups. Finding a balance between the need to pursue scientific research, and the need to provide support to policy and practice remains a key challenge for the future.

From a policy perspective there seems to be a disconnection between what is taking place within universities in relation to small business and entrepreneurship studies and research, and what government policy seeks to do with respect to small business and entrepreneurship. As Pittaway and Cope (2007) noted in their review of entrepreneurship education, there is a need for government to develop policies that shape the macro-level climate for such education to take place. This is an issue highlighted by the OECD (2010a) where the need for entrepreneurship and small business programs at the university level were recognised as playing a valuable role in the overall enhancement of SMEs and entrepreneurial activity at the national level.

As outlined in this paper, the level of interest in entrepreneurship and small business studies at the higher education level was driven in the 1980s and 1990s by government policy that focused on enhancing growth and innovation within the SME sector, and also in fostering new venture creation. Research by the OECD (2010b) into what governments can do to foster growth in SMEs highlighted several countries (e.g. Korea, Japan) where government policy was focused on the fostering linkages between small firms and universities to assist with technology transfer and enhance management skills development.

The role of universities in technology transfer and collaborative R&D lies outside the scope of this paper. However, there is substantial evidence from the available literature to suggest that this is an area where such

institutions can play a significant role. It is worth noting that Australian universities are currently viewed by industry as having only a fairly small role in sourcing innovation (ABS, 2010). Universities also provide a key source of qualified staff for industry, but there is a need to encourage more engagement between university students and SMEs, which are less likely to be considered as target employers when compared to the large companies.

While some institutions are already moving in this direction, more could be done to foster multidisciplinary research and education in innovation and design, with laboratories, incubators and industry partnerships to help connect SMEs and university students and staff. This can enhance the potential for new business start-ups or internships that might lead to future employment for graduates. In the report of the non-government members to the Prime Minister's Manufacturing Taskforce of 2012, there was also a recognition that increased collaboration between universities and industry, particularly SMEs, would require a change in how academics viewed their research activities:

"For universities, it would mean a greater focus on applied research in areas relevant to regional advantages, supporting new spaces for researchers to develop solutions beyond the confines of existing rules and incentives, and reclaiming their public role as bearers and transmitters of valuable knowledge." (Prime Minister's Manufacturing Taskforce Report, 2012, p. 76)

For this to occur there would need to be some recalibration of the way in which university research is measured and rewarded at the national level.

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APPENDIX: PROFILES OF AUSTRALIA'S UNIVERSITIES IN ENTREPRENEURSHIP AND SMALL BUSINESS ENGAGEMENT



Overview	Established in 1991 the ACU has campuses in Brisbane, Sydney, Canberra, Ballarat, Melbourne and Adelaide. It has around 25,000 students enrolled. The ACU does not have a strong profile in either small business or entrepreneurship research.
Education	The ACU does offer some units in entrepreneurship, entrepreneurial finance and small business governance.
Research	The ACU does not have any dedicated small business research centres or centres in entrepreneurship. However, its research has encompassed ethics and values in corporate governance in business.
Selected Contacts	Professor Peter Steane, Peter.Steane@acu.edu.au



AUSTRALIAN NATIONAL UNIVERSITY

Overview	Established in 1946 the ANU is located in Canberra. It is one of the Group of Eight leading research universities. It has around 18,514 students. Until 2012 the ANU had a Graduate Certificate in Innovation and Entrepreneurship but this program stopped accepting students in 2013
Education	The ANU does offer an undergraduate unit in entrepreneurship and innovation, plus two units at the postgraduate level.
Research	The ANU does not have any designated centres that specialise in small business or entrepreneurship, but some individual research work is being undertaken by academics. This includes an ARC linkage grant the area of private and public sector adoption of standard business reporting.
Selected Contacts	Professor Shirley Gregor, Director National Centre of Information Systems Research shirley.gregor@anu.edu.au



BOND UNIVERSITY

Overview	Established in 1987 Bond U is a private not-for-profit institution located in Queensland on the Gold Coast. It has around 4,100 students. Bond University is home to the Australian Centre for Family Business (ACFB) which is a major centre in family owned businesses.
Education	Bond U also has a suite of units in entrepreneurship and family business at the undergraduate and postgraduate level.
Research	The ACFB has been in existence since 1994 and has close links to Family Business Australia, the Family Firm Institute, Family Business Network and partners such as BDO Kendalls and KPMG.
Selected Contacts	Professor Michael Harvey, mharvey@bond.edu.au or acfb@bond.edu.au .



CENTRAL QUEENSLAND UNIVERSITY

Overview	Established as a university in 1992, CQU is located at multiple campuses across Queensland as well as NSW and Victoria. It has around 20,000 students. CQU seeks to engage actively with industry and the community.
Education	CQU does not offer specialist degree programs in entrepreneurship or small business. However, it does have some units at undergraduate level in entrepreneurship and new venture creation.
Research	CQU does not have a specialist small business or entrepreneurship research centre. However, it does have a Business Research Group that has focused on regional labour markets, regional business development, tourism and legal issues impacting on these areas.
Selected Contacts	Professor John Rolfe, j.rolfe@cqu.edu.au A/Prof Kristy Richardson k.richardson@cqu.edu.au Dr Michael Muchiri m.muchiri@cqu.edu.au



Overview	Established in 2003, CDU is located in Darwin, with regional campuses across the Northern Territory. It has around 22,083 students. CDU has both vocational education and training (VET) and higher education level courses.
Education	CDU offers a Certificate IV in Small Business Management and a number of other VET programs targeted at specific industry sectors. It has been collaborating with the Business Enterprise Centres (BEC) around courses tailored to the needs of small business owners. CDU also works with the Australian Institute of Management (AIM) to offer short courses some of which would be relevant to small businesses. Its undergraduate programs target tourism management
Research	CDU does not have a dedicated centre for small business or entrepreneurship but The Northern Institute does undertake some research into entrepreneurship among indigenous people in Canada and northern Australia.
Selected Contacts	Dr Andrew Taylor, andrew.taylor@cdu.edu.au



Overview	Established in 1989 CSU is located in several campus sites across regional NSW and Victoria. It has around 21,341 students. CSU has both vocational education and training (VET) and higher education level courses.
Education	CSU offers some units in entrepreneurship at the postgraduate level such as one in leadership and entrepreneurship, and another "the entrepreneurial project" that focuses on a business plan or case study of an existing entrepreneurial venture.
Research	CSU does not have any identifiable centres but some academics do undertake research into small business. For example, in growth investment opportunities in SMEs, maximising competitive advantage and SMEs and implementing innovation.
Selected Contacts	Dr Lan Snell lsnell@csu.edu.au Dr Rui Bi rbi@csu.edu.au Dr Arnela Ceric aceric@csu.edu.au



Curtin University

CURTIN UNIVERSITY

Overview	Established in 1986, Curtin U is located in Perth Western Australia with branch campuses in Sydney, Singapore and Sarawak Malaysia. It has around 47,960 students. Curtin U has a substantial profile in the field of entrepreneurship and small business. This includes the Centre for Entrepreneurship which is a dedicated management training centre that offers industry outreach programs for small business owners, and those engaged in commercialisation.
Education	Curtin U offers a full undergraduate major in entrepreneurship that contains specialist units in entrepreneurship, entrepreneurship and creativity, small business planning and small business growth. There are opportunities for business owners enrolled in the Centre for Entrepreneurship to articulate into the main degree programs.
Research	Curtin U does not have a dedicated research centre in small business or entrepreneurship, but several staff members within the business school undertake research in this field.
Selected Contacts	Richard Thorning, Director of the Centre for Entrepreneurship r.thorning@curtin.edu.au Dr Louis Geneste, School of Management Louis.Geneste@cbs.curtin.edu.au Dr Paul Weber, School of Management P.Weber@curtin.edu.au



DEAKIN Worldly
 UNIVERSITY AUSTRALIA

DEAKIN UNIVERSITY

Overview	Established in 1974, Deakin U is located in Geelong, Melbourne and Warrnambool Vic. It has around 43,995 students. Deakin U was once home to the Centre for Entrepreneurship, Innovation and Community . However, this centre was closed in 2013 and since then the university has not had a dedicated centre in this field.
Education	Deakin U does not have a dedicated degree in entrepreneurship or small business. However, it does have a unit in entrepreneurship and innovation at the undergraduate level and one in entrepreneurship at the postgraduate level including one at the doctoral level.
Research	Deakin U has recently established a research program within its accounting school focusing on small to medium enterprises.
Selected Contacts	Professor Peter Carey p.carey@deakin.edu.au Dr Fara Azmat f.azmat@deakin.edu.au



EDITH COWAN UNIVERSITY

Overview	Established in 1982, ECU is located in Perth WA with a branch campus in Bunbury. It has around 22,274 students. ECU was once home to Small to Medium Enterprise Research Centre (SMERC) . However, this centre was closed and since then the university has not had a dedicated centre in this field.
Education	ECU offers undergraduate and postgraduate units in small business management as well as entrepreneurship, innovation and creativity.
Research	ECU has several academic staff who focus on small business research.
Selected Contacts	Professor Rowena Barrett, r.barrett@ecu.edu.au Dr Alan Coetzer a.coetzer@ecu.edu.au Dr Janice Redmond, j.redmond@ecu.edu.au



FEDERATION UNIVERSITY

Overview	Established in 1994, FU is located at Ballarat with multiple campuses across regional Victoria. It has around 23,187 students enrolled. FU offers courses at both the VET and higher education level. It has a Centre for Regional Innovation and Competitiveness (CRIC) that undertakes some research that has relevance to small business within a regional context.
Education	FU a Certificate IV in Small Business Management and also offers units at the undergraduate and postgraduate level in entrepreneurship
Research	FU has several academic staff who focus on small business research.
Selected Contacts	Prof Keir Reeves cric@federation.edu.au



FLINDERS UNIVERSITY

Overview	Established in 1966, Flinders U is located in Adelaide and has around 20,165 students. Flinders U offers courses at both the VET and higher education level. Flinders U also runs the New Venture Institute .
Education	Flinders U offers a Bachelor of Business (Entrepreneurship) and a Bachelor of Business and Technology. At the postgraduate level it offers a Business Administration (Biotechnology) and a Master of Business and Technology. The New Venture Institute at Flinders U runs programs designed to help entrepreneurs' start-up new business ventures. This includes enterprise workshops and related programs.
Research	Flinders U has no identifiable research centre specialising in small business or entrepreneurship, however, there are some researchers who have relevant skills in areas such a taxation reform and GST.
Selected Contacts	Matt Salier, Director, New Venture Institute Tel: 08 8201-7522 Dr Paul Kenny paul.kenny@flinders.edu.au



Overview	Established in 1971, Griffith U is located in Brisbane and the Gold Coast, Qld. It has around 43,000 students.
Education	Griffith U offers undergraduate units in entrepreneurship and new business venturing, entrepreneurial innovation marketing and entrepreneurship in tourism, hospitality, sport and events. It also has units at both undergraduate and postgraduate level in franchising and small business, tourism and small business management and small business administration and practice management
Research	Griffith U has no specific research centre in small business and entrepreneurship, but several academics are engaged in small business research, franchising and small firms.
Selected Contacts	Professor Lorelle Frazer l.frazer@griffith.edu.au Professor Sara McGaughey s.mcgaughey@griffith.edu.au Professor Andrew Worthington a.worthington@griffith.edu.au Dr Heather Stewart h.stewart@griffith.edu.au



JAMES COOK UNIVERSITY

Overview	Established in 1970, JCU is located in Cairns, Brisbane, Townsville and Singapore. It has around 18,294 students.
Education	JCU offers undergraduate and postgraduate units in entrepreneurship in emerging economies, strategic entrepreneurship, and indigenous and ethnic entrepreneurship.
Research	JCU has no identifiable research centre a small number of academics do some research in social entrepreneurship.
Selected Contacts	Dr Breda McCarthy breda.mccarthy@jcu.edu.au



LA TROBE UNIVERSITY

Overview	Established in 1964, La Trobe U is located in Melbourne with branch campuses in regional Victoria. It has around 38,037 students.
Education	La Trobe offers a Master of Management (Entrepreneurship and Innovation) this has several specialised units in entrepreneurship and corporate venturing.
Research	No identifiable centre but the Business School has a group of academics focusing on entrepreneurship and innovation.
Selected Contacts	Dr Vanessa Ratten v.ratten@latrobe.edu.au



MACQUARIE UNIVERSITY

Overview	Established in 1964, Macquarie U is located in Sydney NSW and has around 38,747 students.
Education	Macquarie U offers a Master of Social Entrepreneurship and postgraduate certificate in the same field. It also offers a Master of Biotechnology that is aligned with the Master of Commerce in Business Management and Organisations.
Research	There is no dedicated small business research centre at Macquarie U. However, the faculty of Business and Economics has an Entrepreneurship, Creativity and Innovation Research Network within the Marketing and Management area. This focuses on human resource management, industrial relations that may have some relevance to small business.
Selected Contacts	Professor Lucy Taksa lucy.taksa@mq.edu.au Professor Paul Gollan



Overview	Established in 1958, Monash U is located in Melbourne with branch campuses across regional Victoria as well as in Malaysia, South Africa, India, Italy and China. It is a member of the Group of Eight research universities. It has around 55,000 students.
Education	Monash has several undergraduate and postgraduate units in entrepreneurship, venture capital and innovation.
Research	Monash has no specific centre in small business related research however they do have some centres that might be relevant plus some academics research small firms. These include the Australian Centre for Research in Employment and Work (ACREW) and the Australian Centre for Retail Studies (ACRS) .
Selected Contacts	Dr Tui McKeown, Faculty of Business and Economics Tui.McKeown@buseco.monash.edu.au Dr Susan Mayson susan.mayson@monash.edu.au Professor Helen De Cieri, ACREW DeCieri@monash.edu.au



Overview	Established in 1973, Murdoch U is located in Perth WA. It has around 18,500 students.
Education	Murdoch offers both undergraduate and postgraduate units in entrepreneurship and innovation within their business and commerce degrees. However, it does not offer units in small business management. Murdoch does have an Executive Education program that could be accessed by small businesses although its programs are not specifically targeted at that sector.
Research	Murdoch U has no identifiable centres in research relating to small business or entrepreneurship.
Selected Contacts	Dr Chris Vas, Director Murdoch Executive Education Centre C.Vas@murdoch.edu.au



QUEENSLAND UNIVERSITY OF TECHNOLOGY

Overview	Established in 1989, QUT is located in Brisbane and has around 39,919 students enrolled.
Education	QUT offers a Master's Degree by research in entrepreneurship and innovation. It also has a unit offered within its undergraduate business degrees in entrepreneurship and innovation, and another in managing business growth. At the postgraduate level it also has units in entrepreneurship.
Research	QUT is also home to the Australian Centre for Entrepreneurship Research (ACE) . This centre focuses on entrepreneurship rather than small business and emphasises the academic research of the field of entrepreneurship. However, it does have some engagement with public policy and practice within this area. It holds an annual Entrepreneurship Research Exchange conference.
Selected Contacts	Prof Per Davidsson, Director ACE per.davidsson@qut.edu.au Karen Taylor, ACE k3.taylor@qut.edu.au Dr Jaehu Shim ACE jaehu.shim@qut.edu.au



RMIT UNIVERSITY

Overview	Established in 1887, RMIT is located in Melbourne and has around 82,000 students in VET and higher education programs. It also has branch campuses in Vietnam and regional Victoria.
Education	RMIT has several specialist courses in entrepreneurship. This includes a Bachelor of Business (Entrepreneurship), and courses in global entrepreneurship, applied entrepreneurship and family business and entrepreneurship. RMIT also fosters business plan competitions, an entrepreneur's coffee club and has an entrepreneur in residence program. There are also a range of services offered by RMIT such as a business skills workshop series.
Research	RMIT has no specific centre in small business related research however they do have an Entrepreneurship and Business Futures Research Cluster , which is part of the Centre for Sustainable Organisations and Work . This research includes work in the fields of family business, fast growth firms, small business strategy, start-up and social enterprise.
Selected Contacts	Prof Kosmas Smyrnios kosmas.smyrnios@rmit.edu.au Dr Heather Douglas heather.douglas@rmit.edu.au Dr Carolyn Tan caroline.tan@rmit.edu.au Dr Xueli Huang charlie.huang@rmit.edu.au



SOUTHERN CROSS UNIVERSITY

Overview	Established in 1994, SCU is located at multiple campuses in Lismore, Coffs Harbour and the Gold Coast within Queensland and NSW. It has around 14,858 students.
Education	SCU has an entrepreneurship and new venture creation specialisation within its MBA program. This has two units focused on new venture creation and the entrepreneurial endeavour, plus an industry project unit. It also has units at the undergraduate level in entrepreneurship and innovation, entrepreneurship and marketing, entrepreneurship, tourism and hospitality, and small business and entrepreneurship for allied health, fitness and sport.
Research	SCU does not have a specific centre in small business research but there is an Entrepreneurship and Enterprise Development Research "node" that is focused on research topics such as ICT industry clustering, and indigenous community capacity building.
Selected Contacts	Professor Geoffrey Meredith geoffrey.meredith@scu.edu.au Professor Stephen Kelly stephen.kelly@scu.edu.au



SWINBURNE UNIVERSITY OF TECHNOLOGY

Overview	Established as an institute of technology in 1908 and a university in 1992 Swinburne is located in Melbourne with a branch campus in Sarawak. It has around 60,000 students at VET and higher education level.
Education	Swinburne has been a pioneer in entrepreneurship education and has a range of undergraduate and postgraduate programs in the field. This includes a Bachelor of Business (Entrepreneurship and Innovation), Graduate Certificate of Entrepreneurship and Innovation and a Master of Entrepreneurship and Innovation. To support these programs Swinburne has a large number of units that focus on entrepreneurship from various business perspectives such as opportunity discovery, creativity and innovation, financing for entrepreneurs and strategy. Through its VET programs and executive development courses Swinburne also offers a range of courses that are relevant to small business owners.
Research	Swinburne has a Faculty of Business and Enterprise. There is also a Centre for Enterprise Performance and they are launching a Centre for Transformative Innovation in 2014.
Selected Contacts	A/Prof Alex Maritz amaritz@swin.edu.au



UNIVERSITY OF ADELAIDE

Overview	Established in 1874 the University of Adelaide is located in Adelaide with branch campuses in regional areas of South Australia. It is a member of the Group of Eight and has around 25,000 students.
Education	U Adelaide offers a Bachelor of Innovation and Entrepreneurship, plus Graduate Certificate, Diploma and a Master's degree in Applied Innovation and Entrepreneurship.
Research	U Adelaide has an Entrepreneurship, Commercialisation and Innovation Centre .
Selected Contacts	Dr Allan O'Connor, Director ECIC allan.oconnor@adelaide.edu.au



UNIVERSITY OF CANBERRA

Overview	Established in 1967 U Canberra achieved university status in 1990. It is located in Canberra and has around 13,000 students enrolled.
Education	U Canberra offers a Bachelor of Entrepreneurship and Innovation. It has several units focusing on entrepreneurship, global entrepreneurship and entrepreneurship and new venture creation. There is also a unit in small business management and enterprise development for health professionals that is offered at the postgraduate level within the Faculty of Health.
Research	U Canberra does not have a dedicated centre or research group working in entrepreneurship.
Selected Contacts	Dr Diane Phillips diane.phillips@canberra.edu.au



**THE UNIVERSITY OF
 MELBOURNE**
 UNIVERSITY OF MELBOURNE

Overview	Established in 1853, U Melbourne is located in Melbourne and is a member of the Group of Eight. It has around 38,281 students.
Education	U Melbourne as units at the undergraduate and postgraduate level in entrepreneurship such as managing innovation and entrepreneurship, social entrepreneurship, entrepreneurial marketing, engineering entrepreneurship and journalism entrepreneurship in new media. There is also postgraduate unit in small business management that was offered in the Music faculty. A Master of Enterprise degree is offered via the Melbourne Business School. This has units in new value creation, innovation and entrepreneurship strategy and an innovation and enterprise project.
Research	U Melbourne does not have a dedicated centre in small business or entrepreneurship research, however, the Westpac-Melbourne Institute runs a regular Small Business Index survey. It also has the responsibility for the HILDA survey of household income and labour dynamics which are potentially relevant to small business.
Selected Contacts	Professor Danny Samson, coordinator Master of Enterprise d.samson@unimelb.edu.au



UNIVERSITY OF NEW ENGLAND

Overview	Established in 1954, UNE is located in Armidale NSW and has around 17,896 students. As noted above, UNE was one of the pioneers of research and teaching in entrepreneurship and small business management with the work of Professor Geoffrey Meredith.
Education	UNE offers a unit in entrepreneurship and small business within its postgraduate certificate, diploma and MBA programs. At the undergraduate level UNE also offers units in small business finance and small business management.
Research	UNE does not have a dedicated centre in entrepreneurship or small business. However, many of their academics undertake research in this area.
Selected Contacts	Professor Alison Sheridan, Head of UNE Business School hosbusiness@une.edu.au Associate Professor Bernice Kotey bkotey@une.edu.au



UNIVERSITY OF NEW SOUTH WALES

Overview	Established in 1949, UNSW is located in Sydney and is a member of the Group of Eight. It has around 50,516 students.
Education	UNSW has a wide range of courses in entrepreneurship. This includes a Diploma of Innovation Management, plus units at the undergraduate level in innovation and entrepreneurship and entrepreneurial services. At the postgraduate level UNSW offers units in entrepreneurship and new venture management, entrepreneurship and strategy, managing technology projects and innovation and international entrepreneurship.
Research	UNSW has a Centre for Innovation and Entrepreneurship (CIE) that undertakes research and industry outreach work. This includes support for start-up firms through the placement of student interns.
Selected Contacts	Professor Karin Sanders, Director CIE k.sanders@unsw.edu.au Dr Martin Bliemel mbliemel@unsw.edu.au



UNIVERSITY OF NEWCASTLE

Overview	Established in 1965, U Newcastle is located in Newcastle NSW. It has around 35,998 students.
Education	U Newcastle offers units at the undergraduate level in business venturing, and leadership and entrepreneurship. There also units in small business management and contemporary entrepreneurship offered at the postgraduate level.
Research	U Newcastle does not have a dedicated centre in entrepreneurship and small business. However, several academics undertake research in this area.
Selected Contacts	Professor Dennis Foley Dennis.Foley@newcastle.edu.au Dr Lisa Barnes lisa.barnes@newcastle.edu.au Annika Westrenius annika.westrenius@uon.edu.au



UNIVERSITY OF NOTRE DAME AUSTRALIA

Overview	Established in 1989, UNDA is a private Roman Catholic University located in Fremantle WA with branch campuses in Broome and Sydney.
Education	UNDA offers units in innovation and entrepreneurship within its undergraduate and postgraduate business degrees
Research	UNDA does not have a dedicated centre in entrepreneurship and small business. However, several academics undertake research in this area.
Selected Contacts	Professor George Kalis george.kailis@nd.edu.au



UNIVERSITY OF QUEENSLAND

Overview	Established in 1909, UQ is located in Brisbane and is a member of the Group of Eight. It has around 46,826 students.
Education	UQ offers units in entrepreneurship and innovation at the undergraduate and postgraduate level. This includes units in the economics of innovation and entrepreneurship, social entrepreneurship, commercialisation, new product development and bio-entrepreneurship and innovation as well as the management of intellectual property.
Research	UQ does not have a specialist centre in small business or entrepreneurship but several of its academics undertake research in this area.
Selected Contacts	Associate Professor Martie-Louise Verreyne m.verreyne@uq.edu.au Associate Professor Polly Parker p.parker@uq.edu.au Dr Patricia Rowe p.rowe@uq.edu.au Mr Philipp Kirsch p.kirsch@uq.edu.au



University of
 South Australia **UNIVERSITY OF SOUTH AUSTRALIA**

Overview	Established in 1991, USA is located in Adelaide with branch campuses in regional South Australia. It has around 35,046 students.
Education	USA offers a number of units at undergraduate and postgraduate level in entrepreneurship. This includes units in entrepreneurship, innovation and small business management, plus small business management for professionals. There are also units in commercialisation, managing new ventures and corporate entrepreneurship. USA offers an MBA (Entrepreneurship) and a Master of Management (Innovation and Entrepreneurship). There is also a “studies in small enterprise” unit at the undergraduate level. Through its executive education programs USA also offers courses of potential value to small business such as a “lean management (continuous improvement) course.
Research	USA has a Defence Systems Institute that has a program focusing on helping SMEs do business with the Department of Defence.
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UNIVERSITY OF SOUTHERN QUEENSLAND

Overview	Established in 1967 as an Institute of Technology and in 1992 as a university, USQ is located in Toowoomba, Hervey Bay and Springfield Queensland. It has around 27,337 students.
Education	USQ has a small business specialisation within its Bachelor of Business degree. This includes units in creativity, innovation and entrepreneurship and small and medium enterprise development.
Research	USQ has an Institute for Resilient Regions that focuses in part on resilience and performance in SMEs. Among its research projects are a study of sustainability in Queensland SMEs (ecoBiz), plus a study of best practice in managing sustainability in SMEs.
Selected Contacts	Associate Professor Retha Wiesner retha.wiesner@usq.edu.au Professor John Cole, Executive Director IRR john.cole@usq.edu.au



UNIVERSITY OF SYDNEY

Overview	Established in 1850, U Sydney is located in Sydney and is a member of the Group of Eight. It has around 49,020 students.
Education	U Sydney has a Graduate Certificate in Innovation and Enterprise and also offers a Master of Commerce specialising in Strategy and Innovation. There are several undergraduate and postgraduate units that relate to entrepreneurship including global entrepreneurship, new business opportunities and start-ups, business growth and innovation, social entrepreneurship, enterprise and creative industries and strategy and entrepreneurship.
Research	U Sydney has an Entrepreneurship and Innovation Research Group (EIRG) that undertakes multi-disciplinary research into business innovation and entrepreneurial ventures.
Selected Contacts	Professor Sid Gray, EIRG co-director sid.gray@sydney.edu.au Dr Richard Seymour r.seymour@econ.usyd.edu.au Dr Shae McCrystal s.mccrystal@usyd.edu.au



UTAS UNIVERSITY OF TASMANIA

Overview	Established in 1889, UTAS is located in Hobart and Burnie and has around 26,783 students.
Education	UTAS has a range of units at the undergraduate and postgraduate that level focus on entrepreneurship and creativity, entrepreneurship and innovation, the foundations of entrepreneurship and innovation, place and entrepreneurship in the regions. There are also units at the undergraduate level in small business management.
Research	UTAS is home to the Australian Innovation Research Centre (AIRC) , which is engaged in research into business innovation including the digital economy, R&D and innovation in Tasmanian manufacturing and regional business development and innovation in areas such as Burnie.
Selected Contacts	Professor Anthony Arundel, Director AIRC Anthony.Arundel@utas.edu.au Professor David Adams, david.adams@utas.edu.au Professor Morgan Miles morgan.miles@utas.edu.au Dr Colin Jones colin.jones@utas.edu.au



UNIVERSITY OF TECHNOLOGY, SYDNEY University of Technology Sydney

Overview	Established in 1988, UTS is located in Sydney and has around 29,842 students.
Education	UTS offer an undergraduate unit in entrepreneurial integrated practice as well as several units in innovation and entrepreneurship. It also offers units in SME management and small business management and accounting, plus venture capital finance and the theory and practice of venture capital and private equity.
Research	UTS has a strong focus on business innovation and future services, industries and productivity. Other research projects have focused on indigenous entrepreneurship,
Selected Contacts	Professor Roy Green, Dean UTS Business School roy.green@uts.edu.au Associate Professor Ken Dovey kend@it.uts.edu.au



UNIVERSITY OF THE SUNSHINE COAST

Overview	Established in 1994, USC is located north of Brisbane and has around 8,904 students.
Education	USC has undergraduate and postgraduate units in entrepreneurship, small business management, innovation and creativity. It offers an entrepreneurship major in the business degree program with units in new venture development, growth, establishment and operation.
Research	USC also has an Innovation Centre that is engaged in supporting students interested in starting up new business ventures. The centre has a business incubator and focuses on "knowledge-based businesses". It runs monthly enterprise events and boardroom briefings as well as executive education courses.
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UNIVERSITY OF THE WESTERN AUSTRALIA

Overview	Established in 1911, UWA is located in Perth WA and is a member of the Group of Eight. It has around 24,335 students.
Education	UWA offers units at the undergraduate level in entrepreneurship, small business management and new product development and commercialisation. Within its MBA program it has units in entrepreneurship and innovation, small business management and the management of technology and innovation. It also has an alliance with the Australian Institute of Management (AIM) through which it delivers executive education programs.
Research	UWA had Centre for Entrepreneurial Management and Innovation (CEMI) until it was closed in 2007. CEMI was re-established in 2010 as a virtual centre but is not an official UWA research unit. Several academics undertake research in entrepreneurship and small business.
Selected Contacts	Professor Tim Mazzarol tim.mazzarol@uwa.edu.au Professor John Watson john.watson@uwa.edu.au Dr Alex Tan a.tan@uwa.edu.au Dr Joanne Sneddon joanne.sneddon@uwa.edu.au Dr Elena Mamouni Limnios elena.limnios@uwa.edu.au



UNIVERSITY OF WESTERN SYDNEY

Overview	Established in 1989. UWS is located in Sydney with campuses in multiple locations across the western suburbs. It has around 40,257 students.
Education	UWS has undergraduate and postgraduate units in innovation, creativity and entrepreneurship, governance, ethics and social entrepreneurship, entrepreneurship and innovation. There is one unit on innovation and entrepreneurship within the MBA program. UWS also has a "Small Business Support" program that offers business advice, training, seminars and online support.
Research	UWS is active with small business outreach programs from NSW and Australian government. Linking students to SMEs.
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Overview	Established in 1951, UOW is located in Wollongong NSW and has campuses in Sydney for its Sydney Business School, the Illawarra region, plus a campus in Dubai UAE. It has around 28,964 students.
Education	UOW offers a Graduate Certificate in Innovation and Entrepreneurship. It also has undergraduate level units in small business management and entrepreneurship.
Research	UOW has the Centre for Small Business and Regional Research (CSBRR) , which undertakes research into SMEs as well as providing outreach services for small businesses.
Selected Contacts	Dr Charles Harvie, Director CSBRR charvie@uow.edu.au Dr Anil Chandrakumara anilc@uow.edu.au



Overview	Established in 1916, VU is located in Melbourne with other campus in Victoria and Sydney. VU combines VET and higher education level courses. It has around 51,000 students.
Education	VU offers a small business and entrepreneurship specialisation within its Bachelor of Business and has units in accounting for small business, innovation and entrepreneurship, entrepreneurial business management, introduction to small enterprise and entrepreneurial business issues. It also has units in recreation entrepreneurship and an enterprise project. Within its VET level courses VU offers a wide range of small business related courses.
Research	VU once had a Small Business Research Unit however this has closed. Several academics undertake research into small business and entrepreneurship.
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