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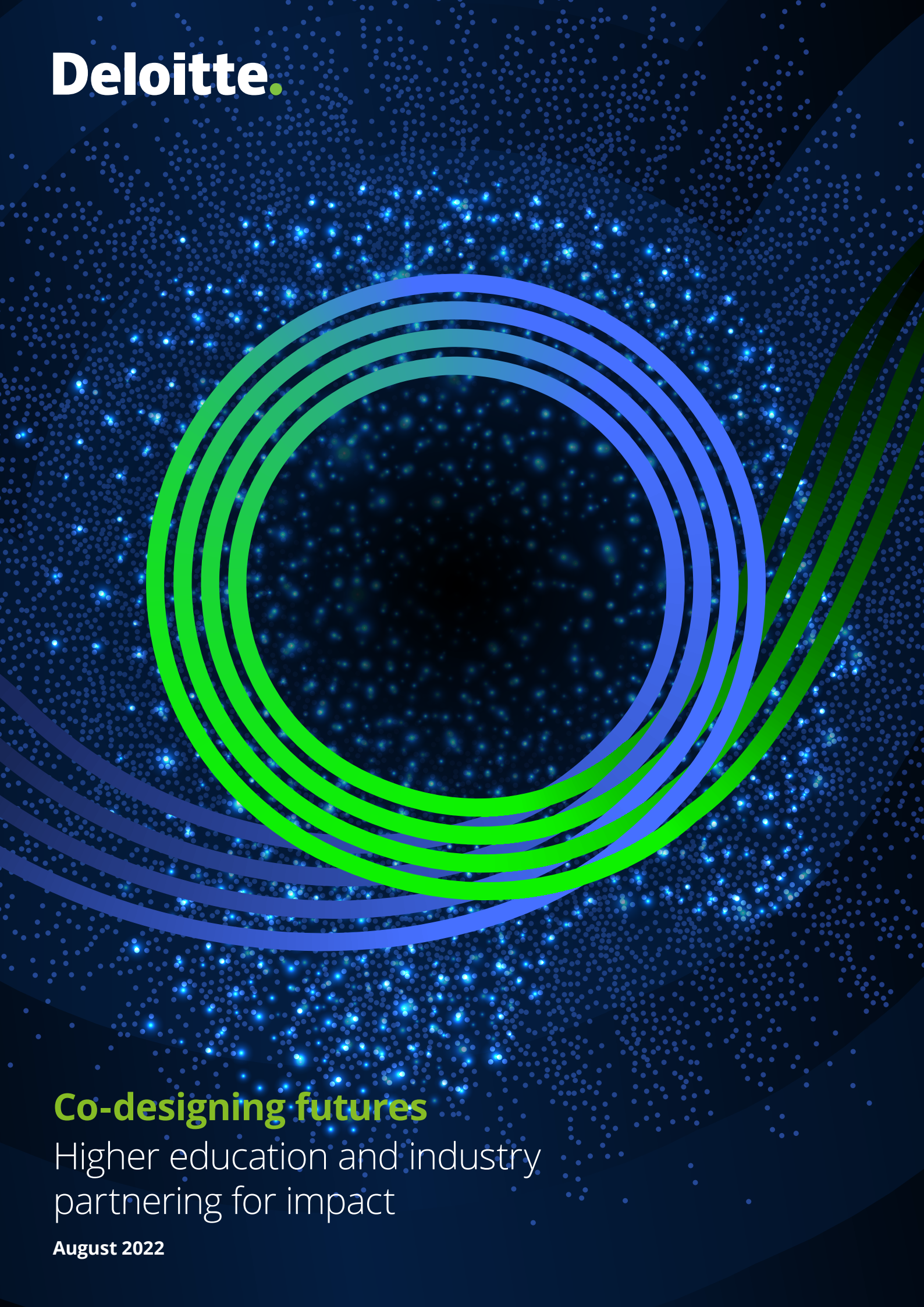


Co-designing futures

Higher education and industry partnering for impact

August 2022

ACKNOWLEDGEMENT

Deloitte wants to play our part in making Australia a more spiritually generous and inclusive country that is truly at peace with itself and its history. We take our guidance from Indigenous Australians on how we can create a future that recognises the sovereignty and rightful place of First Nations people.

Foreword

It is well established that universities play an instrumental role in driving economic and social prosperity. However, there remains untapped potential in the form of closer partnerships between universities, the vocational education and training sector, and industry. As Australia confronts stubbornly sluggish productivity growth, the biggest skills shortages seen in decades and a complex array of social and environmental challenges, these partnerships hold the key to fully realising the immense value on offer from Australia's world-class university sector.

Against this backdrop, the Deloitte team is delighted to be presenting another thought piece for the sector – one which builds on and is complementary to our recent pieces *Where to next? Beyond the skills gap;* and *Where to now? Blended futures.*

As a leading professional services firm, we have a deep understanding of the challenges and opportunities facing the tertiary sector and work nationally and globally to support the excellence that Australian universities are renowned for. In doing so, we have been committed to collaborating and building partnerships with universities. Our experience in these ventures – both our successes and our learnings – combines with the vast potential we see in closer ties between industry and the university sector to provide the motivation for this report.

The report has drawn on new industry research and a series of case studies to inform its findings and recommendations. Our hope is that the research provides all parties – governments, industry and further education providers – with insights, guidance and practical tools that aid in their endeavours to advance the partnership imperative. Among the outputs of this research is a new tool that is available for the sector to assess their capabilities and maturity in partnering and collaboration.

Deloitte is deeply committed to supporting higher education institutions in growing their capability and we invite you into the discussion with us. You can contact us to discuss an executive level breakfast lab to explore best practice industry relationships and partnerships hosted by Deloitte subject matter experts and leading education practitioners, captains of industry and policymakers in the area of industry partnering and collaboration.

Terminology and definitions

Industry

Organisations in the public, private and not-for-profit sectors, excluding higher and further education providers and external to universities. Within this report we use the word 'industry' to refer to such organisations collectively (and irrespective of their type and focus of their business), rather than specific sectors of the Australian economy (for which we use the term 'sector').

Industry partnership

A formal or informal arrangement where a university, or an individual employed by a university, works with an external organisation for mutual benefit. This may include the provision of services by a university (such as research or professional education delivered for an industry organisation), a joint agreement (such as student placements, co-investment in scholarships, or the co-design of teaching programs), or other forms of collaboration (including but not limited to areas such as specialist advice/consultancy provided by individual academics, graduate employment opportunities, or the joint sponsorship of events).

Research and development (R&D)

Research and development (R&D) is defined by the Organisation for Economic Cooperation and Development (OECD) as creative work which is undertaken on a systematic basis to increase the stock of knowledge and the use of this knowledge to devise new applications. The Australian Bureau of Statistics uses this same definition to identify R&D expenditure by businesses, governments and higher education providers.[1]

Small-and medium-sized enterprise (SME)

A small- and medium-sized enterprise is a business with employee numbers below a certain number. In Australia, the Australian Bureau of Statistics defines a small business as employing 5 to 19 employees, and a medium business as employing 20 to 199 employees.[2] 28% of the just under 1 million businesses in Australia are SMEs, while 72% of employing businesses have fewer than 5 employees (micro businesses) and 0.4% employ more than 200 employees (large businesses).[3]

1 Australian Bureau of Statistics, Research and Experimental Development, Businesses, Australia methodology (2019) https://www.abs.gov.au/methodologies/research-and-experimental-development-businesses-australia-methodology/2017-18

2 Australian Bureau of Statistics, Australian Industry 2019-20, https://www.abs.gov.au/statistics/industry/industry-overview/australian-industry/latest-release

3 Australian Bureau of Statistics (2021) Counts of Australian Businesses, including Entries and Exits, June 2017 to June 2021 https://www.abs.gov.au/statistics/economy/business-indicators/counts-australian-businesses-including-entries-and-exits/jul2017-jun2021#employment-size

Contents

About the research and report

In the midst of the pandemic, Deloitte undertook research into university and industry partnerships in Australia. As Australian universities were grappling with reduced international student revenue, they were also rapidly moving to online course delivery and managing remote workforces. Post pandemic, a skills shortage has emerged, and universities and industry are being encouraged to work more closely together.

To understand how university and industry partnerships work in Australia, Deloitte worked with the Wallis Group to survey 150 Australian business leaders and followed up with in-depth interviews with a purposeful sample of industry and university stakeholders. The interviews span many sectors, and reflect organisations ranging from large enterprises and household names, government, small-and medium-sized enterprises, start-ups, and not-for-profits. To seek a broad range of views, participants included representatives from organisations that have never partnered or considered partnering with a university.

Deloitte's interviews targeted organisations operating across the ecosystem of industry–university partnerships including:

- Federal and State government investment and innovation bodies
- Large enterprises, including organisations in the financial services, telecommunications, technology and engineering sectors
- Start-ups and small businesses, with a focus on the health, engineering and aerospace and defence sectors
- Federal and State government departments
- A cross section of Australian universities.

The survey and stakeholder interviews explored three aspects of university and industry partnerships:

1. The nature of university and industry partnerships today. This includes the criteria with which industry select universities to partner with and the factors which have the greatest impact on their choice of university partner.
2. The intention and potential of university and industry partnerships tomorrow. This explores the demand for partnerships and highlights areas where universities can better connect with and support Australian businesses.
3. Views on what universities, their industry partners (current and prospective) and industry generally could do to harness the growing potential of partnerships as the economy recovers from the impacts of COVID-19 and beyond.

The report provides insights for universities and industry organisations to support them to develop new partnership models, and new solutions and services for industry, as demand for industry partnerships increases.

Our research scope focuses on university and industry partnerships. In presenting this research, Deloitte acknowledges the significant opportunities associated with partnering with vocational education providers, and the critical role they play in enabling next generation skills and innovation to support Australia's economic resilience. An assessment of vocational education and training provider partnerships with industry has not been included in the scope of this study given their scale, breadth and depth. Whilst some our research findings may well ring true for vocational education and training provider partnerships, we also recognise their unique standing and the valuable insights they can provide more broadly.

Deloitte survey respondent profile

By size of organisation

81%
20-199 employees

19%
200 or more employees

Does your organisation have a partnership with a university?

11%
Yes – with more than one university

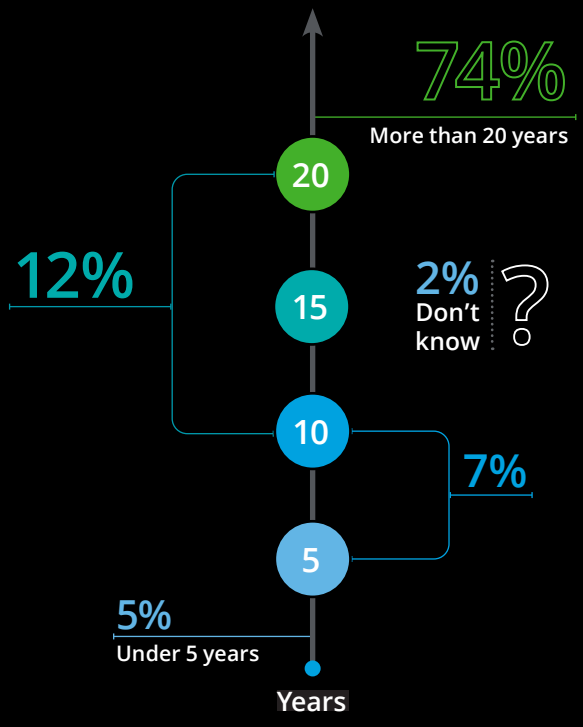
10%
Yes – with a single university

13%
No – but have partnered with universities in the past

17%
No – have never partnered but have considered/are considering

49%
No – have never partnered with a university nor considered it

By age of organisation



By role

20%
Team management and leadership

18%
Talent, recruitment and people development

15%
Organisational performance

11%
Operations and corporate services

11%
Customer service and service excellence

8%
Business development and sales

7%
Research, development and innovation

7%
Technology

3%
Supply chain and/or manufacturing

Executive summary

Partnerships between universities and industry play a vitally important role in Australia's economic prosperity today. However, their potential is significantly greater.

While partnerships in graduate recruitment and applied research are common, there is an opportunity to increase partnerships in areas such as research commercialisation and workforce development. This opportunity becomes an imperative when the effects of COVID-19 are overlayed. Closer ties between universities and industry have a critical role to play both in addressing the acute skills shortages the Australian economy is facing and in driving resilience, productivity and prosperity post-COVID-19.

There is strong demand from industry for partnerships with universities. Australian organisations and businesses are facing critical challenges around talent, operational efficiency and supply chain disruption. They are also prioritising matters of transparency and integrity, sustainability, and gender equality in a broader diversity agenda. These are all areas that universities can support, and where industry sees the potential of partnerships.

More than 75% of the organisations interviewed as part of this research indicated they would establish a partnership, or extend an existing one, for workforce or talent development – highlighting a potential source of demand and revenue for universities; while 50% said the same about product development or innovation – indicating strong ongoing demand for research partnerships. As such, industry is not only seeking more partnerships with universities, it is seeking new types of partnerships to resolve current and emerging workforce challenges. It is also looking to establish strategic partnerships that can scale and flex, rather than 'one off' joint projects.

Despite this demand for partnerships, there is work for universities to do if they are to realise their potential. In particular, institutions need to build the right capabilities and models of partnership coordination and management, while also focusing on expanding and extending existing industry relationships into broader, reciprocal, strategic partnerships. New capabilities and different ways of working with industry partners are needed to do this.

At the same time, universities need industry partners that are willing to share risk, commit resources, and help them navigate their own organisations, particularly in the case of partnerships between universities and large enterprises.

Industry organisations, irrespective of their size or sector, indicated that cultural alignment between parties is critical – not only in the university partner selection process, but for the effectiveness and sustainability of the partnership. The most important enabler of this is industry's ability to work with and engage across a university's academic and professional staff. The potential for a broad collaborative relationship (rather than a transactional one), geographic proximity and academic strength are also important factors.

Our research indicates that there is a need to increase awareness of what universities can deliver through partnerships and the value and return on investment this can generate for industry partners.

This is particularly true of small and medium enterprises SMEs, which as more than a third of the economy, are under-represented among university and industry partnerships.

Universities must be able to tailor their solutions for industry partners. Our research confirms that the common perception that "industry does not know what it wants" from partnerships is partially true, but it reflects a need for universities to co-design tailored solutions with industry partners, rather than a flaw in the approach of industry. The future of partnerships lies not in 'pre-built' university solutions (such as courseware), or for research solutions 'looking for problems' but, rather, in close collaborative partnerships built on deep relationships.

In this way, universities and industry can come together and combine their capabilities to solve pressing, complex challenges through co-designed solutions and adapt and expand these solutions based on changing industry partner needs.

Overview: A sense of place and purpose

In the Deloitte *Building the Lucky Country* series, *The purpose of place: Reconsidered* we posited that Australia's prosperity is "connected to place and how we interact with it" (p. 5). We put forward the view that, over time, rising living standards are reflected in "the evolution of place and the purpose we assign to it" (p. 5).

From Australia's early focus on primary industries such as agriculture and mining to secondary industries like manufacturing, construction and utilities, we now find ourselves in a knowledge era where "... the most highly valued services are those intensive in ideas, knowledge and creative skill" (p. 6).

The purpose of place: Reconsidered was written seven years ago and, by virtue of COVID-19, much has changed in this time. However, the core tenets of this research remain relevant to our prosperity in 2022 and beyond. Australia's universities and industries are deeply engaged and connected to the communities within which they are situated. Many universities are in highly developed innovation or industry precincts in cities. They also support, in some cases, entire regions and towns, often as the largest employer. Whatever their 'place', they each play a highly visible, valued and 'loved' role where they are situated.

As the backbone to Australia's knowledge base, universities are the hothouses of extraordinary ideas that are both pragmatic and blue sky. While universities and industry have been known, on occasion, to have different views on what is required to skill our current and future workforce, they also demonstrate a strong dependence on each other. Partnerships between universities and industry are critical for Australia's future economic growth, employment and prosperity.

A prosperous society values new ideas and progression, and universities help transform individuals, local communities, and our country. Their relationship with industry is critical for our country's future and there are many outstanding examples of that success. Of course, more can be done. This report explores the issues and makes the case for specific changes that universities, industry and government can make to foster deeper connections between universities and industry.

Partnerships between universities and industry are critical for Australia's future economic growth, employment and prosperity.

Our research

This report is a deep dive into university and industry partnerships in Australia. With the Wallis Group, we surveyed 150 Australian business leaders and conducted in-depth interviews with university and business stakeholders.

We focused our questions on the nature of industry and university partnerships today and what is needed in the future. We wanted to understand why some relationships with industry work better than others, what we might learn from one another and what might be done to improve current practices. The resulting analysis, which is grounded in the experience of our participants, defines and benchmarks expectations and maturity based on three propositions:

Proposition 1

Universities are connected to the communities they serve and have a hunger for knowledge making and production. They remain natural partners for industry to collaborate with to respond to the challenges our country faces for future economic growth and prosperity. However, we need to be mindful that businesses are more likely to partner with one another than a university when it comes to innovation.

Proposition 2

Universities and industry must reframe their coexistence into a more productive relationship. In a post-COVID era, Australia needs its universities and industry to work together to ensure Australia's future prosperity. Australia can lift its performance from its current ranking in the OECD for business collaboration on innovation with higher education. But only if it is deliberate and purposeful in doing so.

Proposition 3

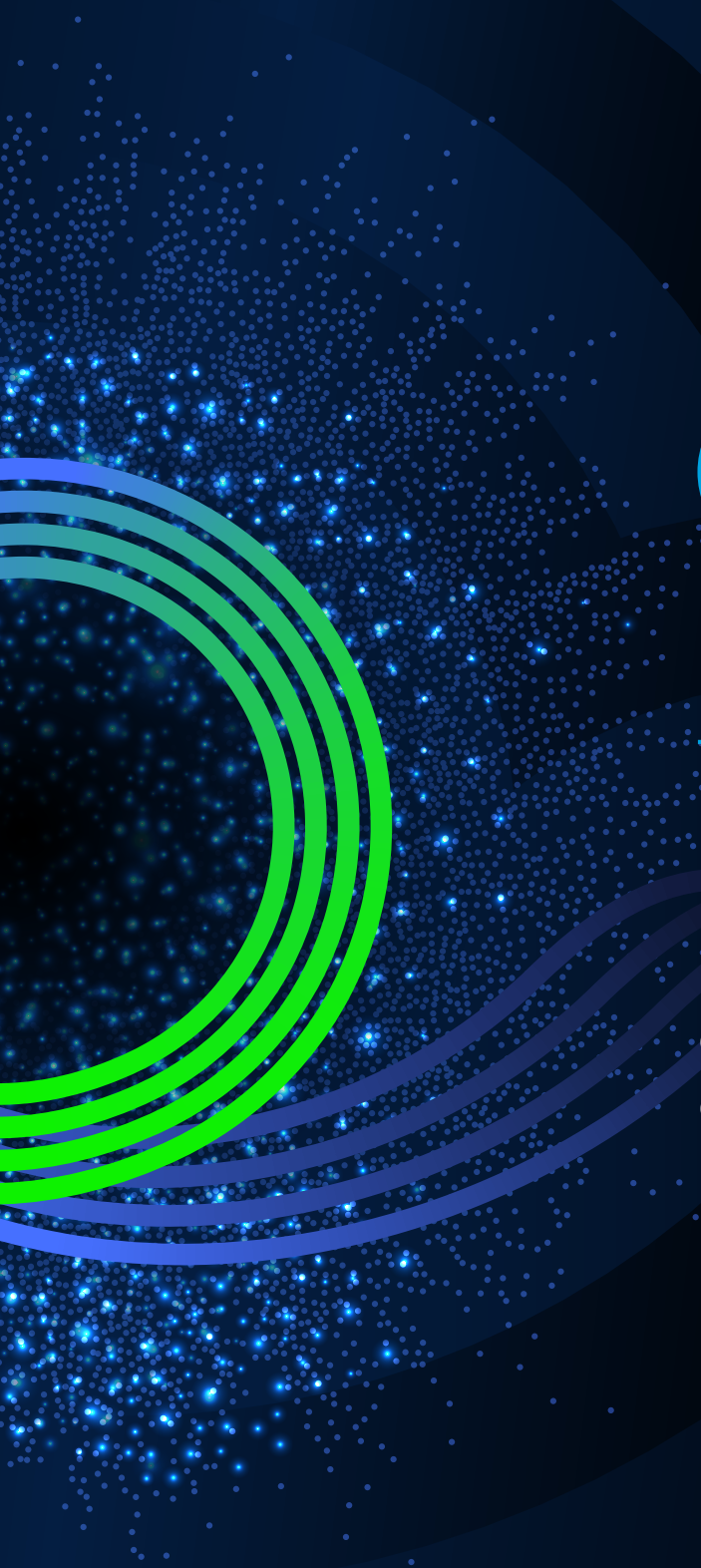
Governments and policymakers can support and enable more productive collaboration and partnerships by ensuring positive policy settings and seeking to actively incentivise collaboration in areas where natural barriers exist.

This report identifies and explores three core pillars that underpin effective partnerships between industry and universities:

University industry partnership capabilities

Industry relationship coordination

Facilitation and solution design



Section 1

The partnership imperative

In this section, we outline the case for stronger and more enduring partnerships between industry and universities.

Universities play a vital role in the Australian economy, supporting economic growth and productivity through research and teaching.

In 2018, Australian universities' operations contributed an estimated $41 billion to the Australian economy.[4]

In graduating skilled workers, universities generate both direct benefits to students and benefits to the wider economy. For every 50,000 university graduates, an additional $1.8 billion in annual economic activity is generated.

Universities' economic value is also demonstrated in research discovery, translation and commercialisation. Every $1 invested in higher education research and development is linked to a $5 return to GDP.[5]

Australia's universities are recognised globally as knowledge generating powerhouses of excellence. For example, Australia ranks 25 of 132 economies in the 2021 Global Innovation Index. An Australian university was recently named number one in the world for its social, ecological, and economic impact in the Times Higher Education (THE) University Impact Rankings. 15 of our universities ranked in the top 100 'under 50' and six Australian universities ranked in the global top 100 – Xinhua in 2021.

The connection between universities and their communities reverberates across Australia. From the graduates that drive productivity, the research that improves lives, and the contributions universities make within their communities, it all supports Australia's economic and social prosperity.

For example, delivering industry-linked training in the areas of highest skills demand is critical to the supply of capability across Australian industries. COVID-19 has pushed many universities towards accessible, flexible and high-quality online delivery, which has enabled learners to upskill and reskill quickly to meet the changing needs of industry.

The more closely connected universities are with the business community, the higher the returns.

Over the past decade, there have been suggestions that universities could be more responsive to the needs of their communities and those of industry. Such suggestions have been amplified when the critical shortages of skilled workers Australia is currently experiencing and the need to build greater levels of economic resilience are overlayed. Our research confirms there is scope for broader, more productive partnerships.

The impact of the university sector on the economy, students and community is maximised when it pursues its core functions – teaching and research – in partnership with industry. Workers whose study involved curricula developed in partnership with industry and models of learning connected to industry are more productive – generating both higher direct earnings and higher economic impact. Industry-aligned curriculum, and student experiences that drive job readiness, are areas of focus for all universities. These are becoming increasingly important as an indicator of student outcomes, and as drivers of student choice.

There is a need to ensure that academic staff have the opportunity to engage with industry – for the purposes of collaborative research, but also to ensure that they are training graduates with the skills to meet the needs of their employers. The 2021 University-Industry Collaboration in Teaching and Learning Review focused on teaching-orientated collaborations. The review outlined recommendations to improve work-integrated learning, to support opportunities to combine work, study and ongoing skills development and to enhance pathways between schools, vocational education and training (VET), higher education and industry.[6]

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4 Deloitte Access Economics (2020) Universities' Contributions to the Australian Economy, https://www.universitiesaustralia.edu.au/wp-content/uploads/2020/04/200325-Deloitte-one-pager-FINAL.pdf.

5 As above

6 The Hon Alan Tudge MP, The Hon Stuart Robert MP (3 June 2021), University leaders to help drive collaborating with industry (joint media release) https://ministers.dese.gov.au/tudge/university-leaders-help-drive-collaboration-industry.

One of the seven recommendations in the final report was that "*Higher education providers and industry work together to build a stronger culture of partnership in the development and delivery of industry-focused micro-credentials*", with progress to be accelerated through a targeted investment fund.[7]

Strong connections with industry are also preferred by students. Deloitte research conducted in 2018 found that almost one third (31%) of Australian workers with an interest in study expect education providers to collaborate with industry in the development and delivery of content.[8] A 2019 Deloitte study highlighted that 60% of postgraduate students consider course co-design and co-delivery with industry to be an important factor when choosing a university.[9] These expectations are also aligned with outcomes. Workers whose university studies reflect industry-integrated curriculum (whether through curriculum co-developed with industry, or through models of learning embedded in industry) are more productive – generating higher direct lifetime earnings alongside higher economic benefits. Despite these benefits, only 38% of students enrolled in Australian universities had a 'work- integrated learning' experience in 2017, with almost half of these being mandatory placements as part of teaching, medicine or nursing degrees.[10]

COVID-19 has exacerbated Australia's skills shortages and strengthened the imperative to leverage universities' capabilities, to support industry to navigate the great reshuffle.

While border re-openings and the prospect of increased migration will go some way toward easing pressures on the labour market, pandemic-induced skill shortages continue, and underscore the imperative for universities to collaborate with industry. As real wage growth remains low, the movement of workers between jobs – in an effort to increase earnings more quickly – is creating friction across the national economy. In the three months to November 2021, more than one million Australian workers started new jobs, a rate almost 10% higher than the pre-COVID average. A record number of around 300,000 workers reported leaving a job for better opportunities, with a typical pay increase of 8% to 10%.[11]

Furnishing the labour market with the volume of workers and the skills to provide the productive capacity the economy requires is key to supporting the Australian economy. Through micro-credentials and industry-aligned programs, universities will be critical to enabling workforce adaptability and ensuring increases in wages are supported by increasing productivity (which, in turn, will put downward pressure on inflation).

In 2020, 50,600 Australians reported 'lacking necessary skills or education' as their main difficulty in finding work.[12] And in 2019–20, businesses identified that the biggest barrier to innovation was a lack of skilled labour – a greater challenge than the cost of innovation, or access to funding.[13]

In 2021, one in five professional occupations was identified as subject to skills shortages – including professions such as accounting, software development, programming and software engineering that are large employing occupations across Australia.[14] And these figures only continue to increase. Professional occupations are most likely to require a bachelor's degree (or higher) qualification. In this context, universities are the ideal partners for industry, to ensure that the graduate workforce has the skills to support employers in navigating the future of the economy.

7 Emeritus Professor Martin Bean CBE and Emeritus Professor Peter Dawkins AO, Review of University-Industry collaboration in teaching and learning (Final Report, released December 2022) https://www.dese.gov.au/higher-education-reviews-and-consultations/university-industry-collaboration-teaching-learning-review.

8 Deloitte, Higher education for a changing world (2018) https://www2.deloitte.com/au/en/pages/public-sector/articles/higher-education-changing-world.html

9 Deloitte, Where to now? Blended Futures (2020) https://www2.deloitte.com/au/en/pages/public-sector/articles/where-now-blended-futures.html

10 Universities Australia (2019) Work Integrated Learning in Australian Universities https://www.universitiesaustralia.edu.au/wp-content/uploads/2022/03/WIL-in-universities-final-report-April-2019.pdf

11 https://theconversation.com/australia-is-seeing-a-great-reshuffle-not-a-great-resignation-in-workforce-frydenberg-176516

12 Australian Bureau of Statistics, Participation, Job Search and Mobility, Australia, February 2020 (Catalogue No 6226.0, 19 September 2020)

13 Office of the Chief Economist, Department of Industry, Innovation and Science (2021), Australian Innovation System Monitor https://www.industry.gov.au/data-and-publications/australian-innovation-system-monitor.

14 National Skills Commission (2021) Australian Jobs https://www.nationalskillscommission.gov.au/publications/australian-jobs-2021

The imperative for universities is more than economic recovery. It's about seizing the opportunity that the pandemic-induced disruption has created to reform, re-orientate, and revitalise the Australian economy to drive higher living and participation standards.

At times, there have been claims that universities can be bureaucratic or that their graduates may not always be work-ready.

At the same time, collaborative work with industry has not always been afforded the same priority or status in universities as other activities. However, there are signs, such as the appointment of industry-orientated professors, that this is changing.

Capability, too, has been an issue – particularly in areas such as business development, relationship maintenance and commercialisation. However, a new kind of professional worker highly skilled in business development has emerged. Academic workforce profiles are being complemented by a new breed of professionals who can bridge the divide between the university and industry.

For industry, especially Small to Medium Enterprises, our research confirmed that many businesses do not know what their local university might be able to offer. It also showed that co-design of solutions is critical for success. Industry and universities need to share expertise to build a stronger culture of collaboration, solve problems and define Australia's future. Bespoke solutions do not come cheaply and 'build it and they will come' is a risk for some.

Universities can also find industry challenging to work with and there are cultural differences in ways of working. Industry partners, for example, can be difficult to navigate and do not necessarily know what they need, or understand the costs, methods, resources or time required.

However, there are many examples of meaningful and successful collaborations between universities and industry resulting in enormous benefit to Australia's ongoing growth and prosperity. Many of Australia's universities have historically been built on long-standing collaborations with industry and for a significant proportion, it was the rationale for why they were established.

We are facing some of the biggest social, scientific and economic challenges in history – from climate change to geopolitical tensions to social isolation and, of course, economic recovery from the pandemic. Creative solutions to these problems lie in pairing the progressive thinking of university researchers with the acumen, influence and reach of businesses.

The pandemic has driven significant disruption of global supply chains and has necessitated that many countries – including Australia – enhance their domestic manufacturing, innovation, and development capabilities. The recently announced $1.6 billion research commercialisation scheme, Australia's Economic Accelerator, is a first step towards bridging the 'valley of death' between research discovery and commercialisation. Universities and industry may look to build on this model by sharing commercial acumen and research capacity, with a focus on priority industries such as space, medical products, resources technology and critical minerals processing, food and beverage, defence, and recycling and clean energy.[15]

Universities and industry have significant capacity to support Australia's recovery from the pandemic, and strengthen Australia's economic sophistication, resilience, and adaptability. To measure and assess progress towards sophistication, a Deloitte framework sets out four pillars of economic resilience – preparedness, innovation, connections, and capabilities.[16] University and business activities are critical to each of these.

We are facing some of the biggest social, scientific and economic challenges in history – from climate change to geopolitical tensions to social isolation and, of course, economic recovery from the pandemic.

15 Department of Education, Skills and Employment (2022) Australia's Economic Accelerator https://www.dese.gov.au/zh-hans/node/13157

16 Deloitte, Building the Lucky Country 8 – Building our resilience (2021) https://www2.deloitte.com/au/en/pages/building-lucky-country/articles/australia-remade.html

Section 2

What is industry looking for?

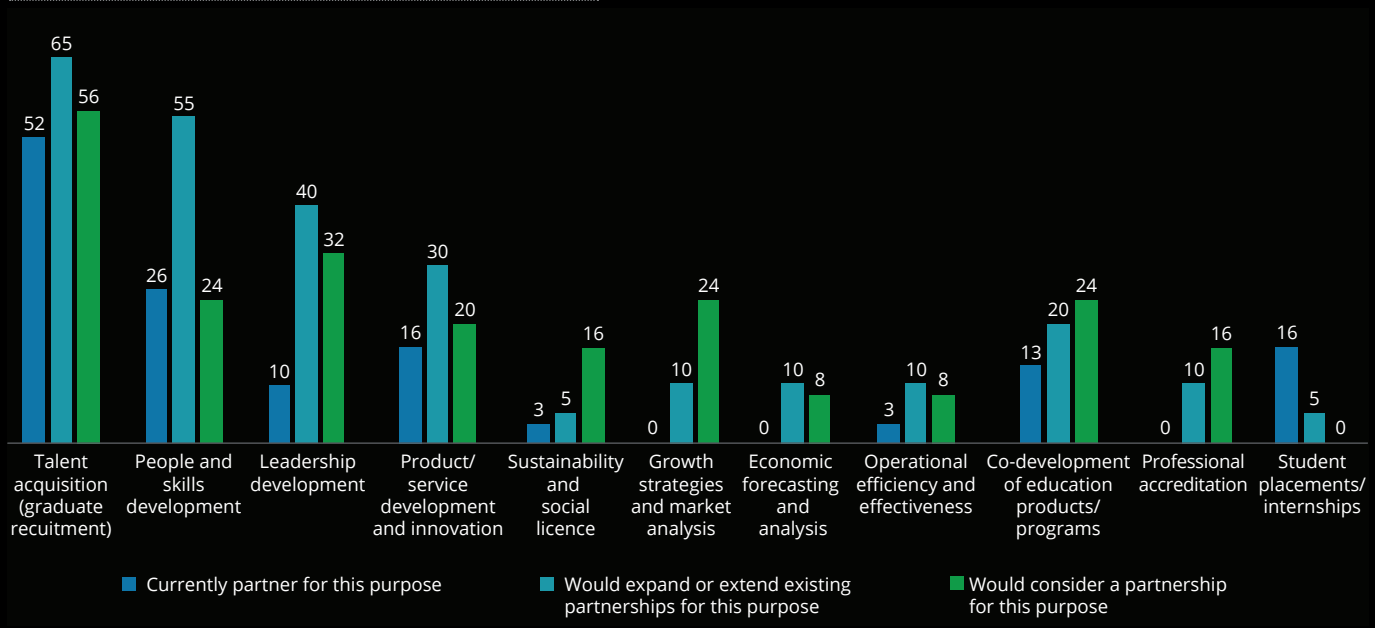
There is strong demand from industry for partnerships with universities. This demand is not only growing, but also changing; there is a greater desire for universities to support workforce development.

More than 50% of business leaders surveyed indicated that they either have, have had, or would consider a university partnership, while most organisations indicated that they would seek to expand or extend their existing partnerships with universities. Importantly, these findings reflect not only the views of large corporates, but also SMEs.

As shown in Figure 1, the nature of industry demand for partnerships is changing. While the most common partnerships involve graduate recruitment, workforce development and research, our research indicates that the most significant areas of partnership growth will be in university offerings focused on talent – specifically, education-focused partnerships that help industry to build the skills of its workforce.

This increased emphasis on talent is an opportunity for universities to target new partnership avenues with educational offerings both for and with industry – including workforce learning and development content, courseware, and programs, and co-developing and co-delivering workforce learning and development curricula. One of the key 'features' industry respondents sought was the ability to combine university-developed content with their own, or that of a third-party learning and development provider, and to co-develop personalised workforce learning material that solves a specific workforce issue (for example, the development of new skills in a particular technology being implemented by the organisation).

Figure 1: Current and future university partnership focus (%)



(Respondents were able to select more than one response therefore totals exceed 100%)

This increased emphasis on talent is an opportunity for universities to target new partnership avenues with educational offerings both for and with industry – including the development of workforce learning and development content, courseware, and programs, and co-developing and co-delivering workforce learning and development curricula.

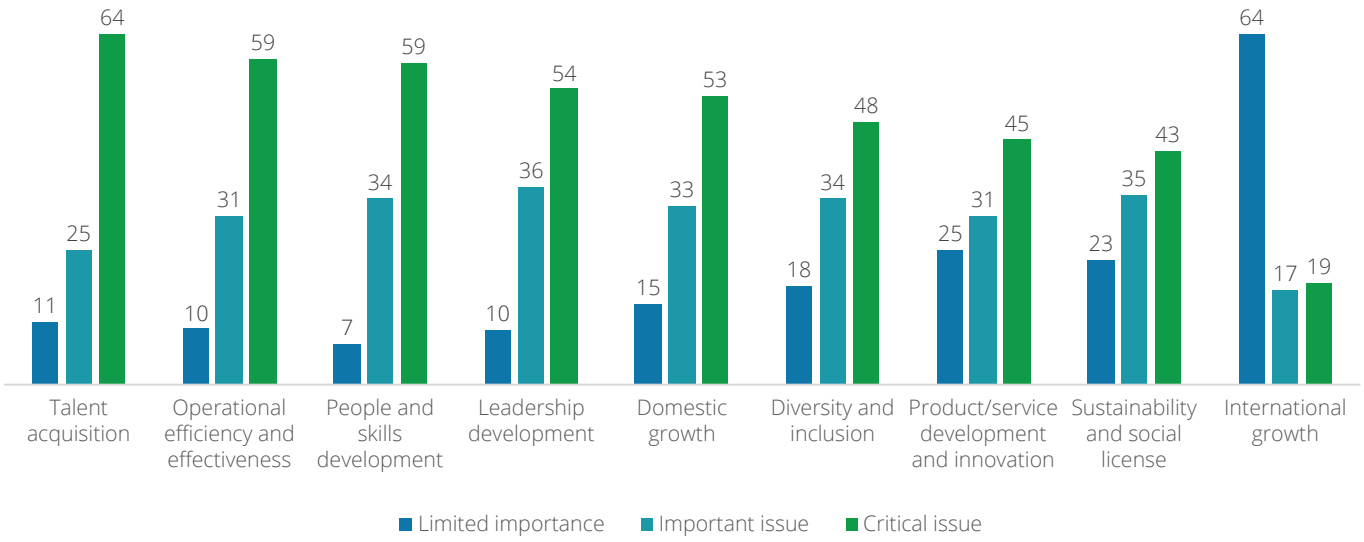
While talent-focused educational offerings are the most significant *growth* opportunity, research and innovation partnerships will remain critical, and demand from industry for applied research will also likely grow. 50% of survey respondents indicated they would expand an existing research partnership or consider a new research partnership in the future, which is consistent with the imperative for Australian industry to build and expand domestic innovation capabilities.

Figure 2 shows that priority areas, where partnerships may be pursued, are strongly linked with industry's most critical short- and medium-term challenges. Talent acquisition, people and skills development and leadership development were highlighted as important or critical issues (over the next two to three years) by approximately 90% of survey respondents; while 75% of respondents indicated the same for product and service development and innovation.

One of the most pressing issues for Australia is climate change and sustainability.

Our research found that there will be opportunities for universities to promote their capabilities in areas like diversity and inclusion, sustainability, and social license, which will be priorities for industry. For example, through collaborative community research, scholarships and student mentoring by local industry employees. Several interview participants highlighted that scholarship partnerships, in particular, were of interest.

Figure 2: Industry challenges and priorities over the next 2-3 years (%)

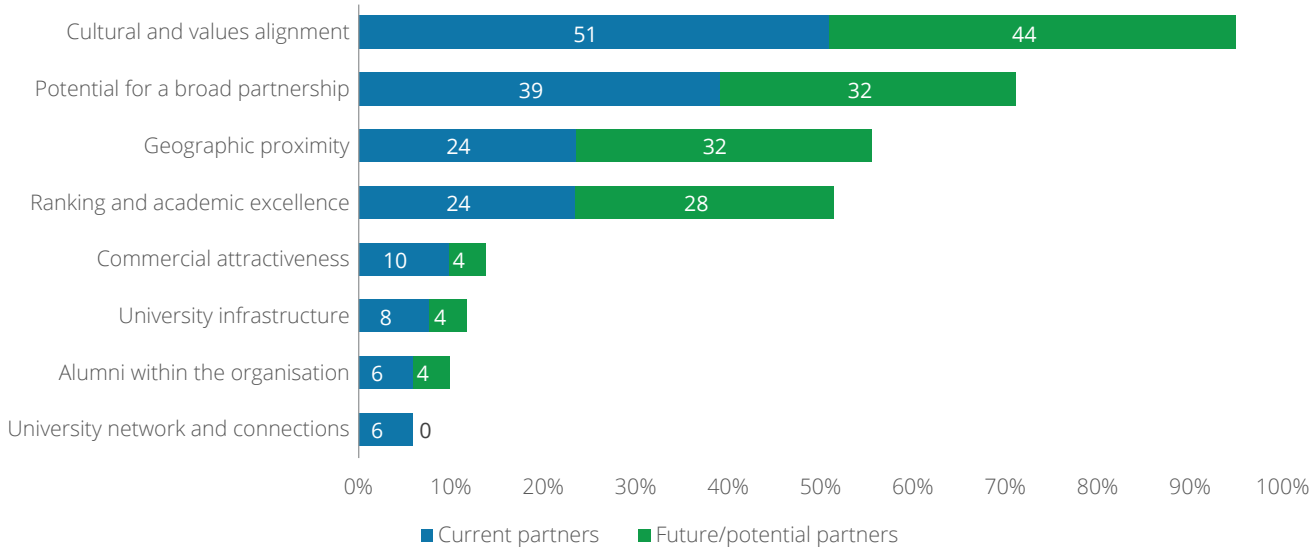


Industry organisations choose university partners based on cultural alignment and the potential to form a broad partnership. Geographic proximity and ranking are also important.

Cultural and values alignment involves institutional mindset, reciprocity, responsiveness, ways of working, flexibility for co-design and commercialisation capabilities.

Our research found the most important criterion with which industry select a university partner is on the basis of cultural and values alignment, with 95% of survey respondents indicating that this was a deciding factor when choosing current and future university partners (see Figure 3). The importance of cultural alignment was also strongly emphasised by interview participants, who highlighted that shared values and ways of working (for example responsiveness to communication, and flexibility) were not only fundamental to the selection of a university partner, but also critical to the ongoing success of university partnerships. This is supported by survey data, with respondents who no longer partner with universities citing *'challenges collaborating and engaging with the university'* as the number one reason.

Figure 3: University partner selection criteria (%)



(Respondents were able to select more than one response)

There is an opportunity to increase industry awareness of the value that partnerships can deliver, and to improve perceptions of the affordability and effectiveness of university solutions.

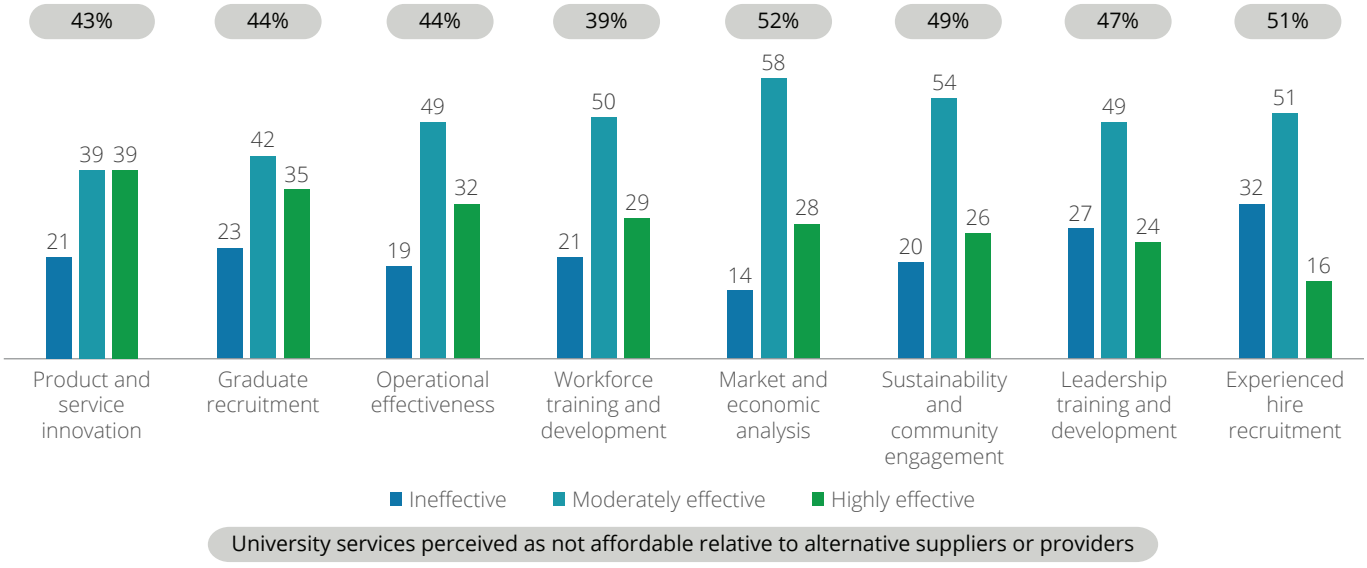
Of those industry survey respondents that have never partnered with a university or never *considered* partnering with a university (approximately half of those surveyed), the top three reasons for not partnering indicate uncertainty about universities' partnership offerings, or perceptions that a partnership might not meet their organisation's needs. Universities would benefit from a clear playbook of 'offers' and 'capabilities' available to industry. While many respondents in this category *did* state that they have important or critical business priorities that are aligned to university partnership offerings, 40% stated that they *'do not have any requirements that could be met through a university partnership*, 30% *were unclear what university partnerships could offer*, and 25% were *unclear what a university partnership would involve'*. Several SME interview participants also indicated that they would not have considered a university partnership were it not for a connection made by a third party.

As is shown by Figure 4, approximately 80% of survey respondents stated that universities are moderately or highly effective in graduate recruitment and product and service innovation (research); the most common industry and university partnerships (alongside work-integrated learning). However, around a third of survey respondents also indicated that universities are ineffective in supporting experienced hire recruitment (32%) and leadership development (27%) – both of which are closely aligned to industry priorities. Interview participants raised opportunities for universities to offer more services in these areas, such as postgraduate employment pathways informed by their prior work experience, stronger connections with alumni networks, and programs for early career academics and Higher Degree Research (HDR) students to spend time in working in industry.

Almost one quarter (23%) of respondents indicated challenges regarding graduate recruitment, with interview participants also raising issues relating to graduate work readiness and the need for greater industry engagement and participation in the curriculum. Interview participant feedback here varied across organisations, with larger industry contributors emphasising soft skills gaps (in particular, graduate understanding of 'ways of working' once in the workforce) as a more critical challenge than technical knowledge. Smaller contributors were more concerned with currency and comprehensiveness of graduates' technical knowledge and skills. A number of interviewees highlighted the need for more practical teaching in disciplines such as engineering if graduates are to be truly 'job ready', and an active preference for VET qualified workers for some engineering roles where VET programs provide more practical training and experience for students.

University solutions (including innovation and graduate recruitment) are also perceived to be less affordable than they are effective, and there is a clear opportunity for universities to address affordability perceptions – particularly for SMEs – and particularly concerning talent-related services and solutions where universities will be competing with private professional learning providers.

Figure 4: Perceived effectiveness and affordability of university services and solutions (%)



RMIT Online and major Australian organisation – Advanced product management future skills short course

Impact	
571	Industry partner employees upskilled across the Product Management Suite
1743	Total students completed Product Management and Advanced Product Management courses
70%	Good teaching score
80%	Student satisfaction score

Partnership focus

RMIT Online aims to build a community of life-long adult learners and prepare them with the skills they need to be successful at work. This philosophy centres around working in partnership with industry to tackle the skills gap in Australia. In practice this means involving industry experts at every stage of the teaching and learning value chain to ensure that teaching is, and remains, relevant for employers and learners. Course content is shaped with input from expert industry partners while industry practitioners teach and mentor students bringing them real and practical industry experience and knowledge.

This approach is enabled by an ecosystem of industry partners; a network of relationships with industry practitioners that continues to grow and strengthen organically over time with each successful partnership. Connections are made within and outside the ecosystem, and the network of industry experts supporting course delivery grows. It is through the ecosystem that RMIT Online sources the best industry expertise for a particular skill to deliver it's successful Future Skills short course portfolio.

The partnership model

The multi-year partnership between RMIT Online and this Major Australian Organisation (a household name) began by tackling a workforce challenge. The industry partner needed to upskill a large cohort of network engineers and build its software networking capability as part of a transition from a physical to digital network. RMIT Online and the industry partner worked together to identify the workforce skills and learning needs, and custom-built an online course in Software Defined Networking to support the upskilling of engineers in the transition to cloud. The course is also offered industry-wide as part of RMIT Online's Future Skills short course series.

The industry partner also wanted to improve product management capabilities across its business. The organisation adopted RMIT Online's existing Product Management Fundamentals short course to upskill its product managers and standardise product management skills nationally. The course is delivered by expert industry partners – originally REA Group, Concentrix Tigerspike and Slack, and now also the industry partner organisation itself – and includes skills in product innovation, lifecycle management, commercial acumen, product economics and data-driven decision making. All product managers employed by the industry partner have achieved competency benchmarks, and have the skills to help transform the organisation into a product-led business.

By tracking the maturity of product management skills over time as part of the partnership, it was identified that a more advanced learning offering was required. The industry partner then worked with RMIT Online and other partner organisations to co-develop the Advanced Product Management course.

RMIT Online's industry partner now routinely runs its employees through the Product Management program and is an industry subject matter expert on the course content. The partner's subject matter experts regularly participate in course delivery for the broader learner cohort, not just its own staff.

Success factors

RMIT Online's partnership with this industry partner is addressing the national skills gap. The courses designed and delivered in partnership with the organisation (as well as other industry partners) are successful because they have been genuinely co-designed; both in response to the organisation's specific workforce needs, but also to collaboratively address the broader workforce skills development needed across sectors. Through this partnership model, RMIT Online is bringing together the expertise of a broad range of industry partners to provide a high-quality course that benefits its partner orgnanisation's employees as well as Australian learners more broadly.

The partnership is characterised by a continuous improvement approach. Monitoring the learner experience and learner outcomes on the Product Management Fundamentals course led to collaborating on the development of the Advanced Product Management course. The Product Management Fundamentals and Advanced Product Management 'bundle' is one of RMIT Online's most popular Future Skills programs.

Section 3

What makes a successful partnership?

This section outlines what makes a successful partnership, and how strong collaborative relationships between universities and industry partners are formed.

Successful partnerships are founded on cultural alignment, shared goals, and effective collaboration. Industry exposure and understanding across the university workforce can support this.

95% of the industry representatives surveyed stated that the alignment of culture and values and ease of collaboration are key criteria with which university partners would be selected. Many interview participants indicated that they chose to pursue or decline a partnership with a specific university on this basis alone, and that it was a critical requirement of a successful university partnership once a partnership is established. Cultural alignment, or its absence, can make or break a partnership.

While the phrases 'cultural alignment' and 'ease of collaboration' have many possible interpretations, interview participants from industry organisations and universities defined these requirements as:

- The establishment of clear and shared goals at the outset of the partnership
- Setting specific deadlines, objectives, and measures, then tracking and delivering against these
- 'Hygiene factors' such as meeting management and timely responses to communications
- Agreeing and establishing structured approaches to manage ambiguity, for example in the co-design of solutions and 'checkpoints' to assess outcomes and change direction if required
- A willingness to be flexible – on the university side, to work with industry to shape bespoke solutions and to manage internal processes on behalf of industry partners, and on the industry side, to accept risk when outcomes are not guaranteed.

These requirements are difficult to meet unless university partnership stakeholders understand and recognise the commercial priorities and motivations of industry (that is, 'how industry works'); a level of industry exposure and experience is needed across the university workforce to provide this understanding and to adapt ways of working accordingly.

Interview participants (from large enterprises, SMEs and universities themselves) highlighted the challenges that emerge when university employees are not experienced in working with industry (most often a lack of responsiveness). They also highlighted that these challenges could arise at any stage of a partnership, and they are not confined to the academy: industry partners often engage with careers advisers (student recruitment), legal teams (intellectual property) and business development teams (partnership coordination) alongside researchers and other academics, and the responsiveness of these professional teams and employees is critical.

A level of university project management capability is needed to establish collaboration and to drive responsiveness. This may reflect dedicated resources, for example, in the case of major research partnerships or specific skills and knowledge among those that frequently work with industry or university partners, such as relationship managers or academic leads.

If partnerships are to succeed and expand, facilitation and coordination mechanisms and resources are needed to navigate each partner organisation.

Research participants from both universities and industry highlighted that partnerships are often complicated by the need to navigate each organisation and its processes (with many participants from larger organisations highlighting the need to navigate their own organisation as well as that of the university partner). As industry organisations often seek broad partnerships with universities (see section 2. What is industry looking for?), this will become more critical, and mechanisms to facilitate and coordinate multi-dimensional partnerships will be key. These mechanisms must transform partnerships from many *distinct and unconnected* one-to-one relationships to many *connected and coordinated* one-to-one relationships with the potential to expand and extend.

However, navigation and engagement challenges vary across industry partners and different types of partnership:

- For smaller industry organisations, the main challenge is making an initial connection with the right individual or area of the university. Interview participants suggested it was difficult to both 'find' the right academic to engage with during the initial discussion phase, and also to find an appropriate contact within the university to help them navigate the institution, its people and its processes. While there are mechanisms that can support SMEs (including those profiled in this report such as CSIRO's Innovation Connections program), the impetus is on universities to facilitate connections and provide an easily accessible and responsive 'front door'.
- Larger industry organisations that are experienced in university partnerships, and particularly those in industry sectors such as technology and medical science with mature internal research and development capabilities, will often have senior resources dedicated to the management of university research partnerships. In these instances, it is important for universities to have 'point' teams or individuals that can work with nominated industry contacts to make connections with individual researchers and academic leaders. Without such mechanisms, it is likely to be challenging to expand partnerships beyond research collaboration and into emerging areas such as professional education. It may also be challenging to connect industry partners across faculties for multidisciplinary research.
- For other large industry organisations (that is, those that do not have dedicated university partnership managers), the challenge is perhaps greatest. It is difficult for the industry partner and the university to navigate each other, particularly where a broad partnership spans different industry organisation verticals such as HR and product development. While there is no 'silver bullet' here, and the impetus falls on the university to coordinate the institution's side of the partnership *and* to navigate the industry partner organisation, interview participants emphasised that connections at the senior (including executive) levels of both organisations can encourage coordination on the industry partner side.

There are common requirements for a single university 'front door', and for dedicated relationship coordination resources. Interview participants stated that these resources, often embedded within universities' industry engagement or business development functions, are most effective when they are aligned to a specific industry sector, when they have strong knowledge of this sector. This often works well when they are sufficiently senior to manage university processes and engage with academic leaders on behalf of industry partners (and vice-versa). Issues concerning turnover of relationship management and business development resources (within a university) were also raised – hiring, developing *and retaining* the right resources is critical.

Strong personal connections are an important enabler of effective partnerships. Coordination mechanisms should help to create and nurture individual one-to-one relationships.

Almost all interview participants highlighted that individuals within the university were the key to the success of their partnerships, and in most cases these individuals were academic staff – ranging from early career researchers through to professors and deans. While there are partnerships that *may* not directly connect industry and the academy (for example, partnerships focused on student diversity or student employment opportunities), those that hold the greatest growth and revenue potential (professional education and research partnerships) will.

Although coordination and facilitation are necessary for partnerships to extend and expand, the mechanisms that universities put in place to coordinate partnerships should build and nurture individual connections (including with the academy); they should not detract from the importance of these relationships, or create a barrier to them. Accordingly, relationship coordination resources must have a strong understanding of the university and a wide internal network – both to connect industry stakeholders with the right university contacts, and to facilitate multi-disciplinary partnerships that cross faculties (for example, partnerships in biotechnology).

Universities need to tailor their services and solutions to the specific needs of individual industry partners and to focus on quality. 'One size fits all' approaches are not sufficient.

Despite several clear and consistent findings that apply across industry, including across sectors of different sizes, the needs of industry organisations about partnerships are very specific. Of those industry survey respondents that have an existing university partnership, 90% stated that the subject of this partnership was specific to their organisation, the region in which they operate, or their sector. Successful partnerships require that universities quickly understand the needs of industry partners, and tailor their services and solutions. Effective partnerships share:

1. **Solutions are designed *together* and in line with industry requirements.** Pre-defined university offerings (such as packaged courseware or applied research projects that reflect "*a solution looking for a problem*") are unlikely to meet the needs of industry in most instances. Instead, successful partnerships are not only bespoke, but they are also designed in collaboration – and often in response to a conceptual problem that requires definition. This requires a willingness from both parties to invest time up-front for solution design, and both mechanisms (such as structured workshop approaches) and resources on the university side that are dedicated to 'translating' industry needs into university solutions.
2. **Key university employees have a deep knowledge of industry to respond to partner needs.** To design *and lead the delivery of* bespoke solutions, key university employees require a deep knowledge of industry. This is distinct from, and in addition to, an understanding of industry ways of working – which is required more broadly. These employees include industry engagement and senior academic leaders who drive solution design activities, oversee partnership delivery, and mobilise the right university teams to work with industry partners. Without this knowledge, partnerships can diverge from industry objectives over time. Solution design processes can be overly reliant on the industry partner (impacting industry perceptions of university responsiveness), and identifying the right university resources to meet the industry partners' needs can be challenging (particularly for multi-disciplinary partnerships).

These require that universities are equipped to combine industry knowledge, academic discipline expertise and solution design capabilities to meet the specific need of the industry partner. For partnerships that have a local, regional or community focus, such as local workforce skills development partnerships, industry knowledge must be coupled with strong local context and connections on the university side.

Truly successful partnerships require that industry organisations commit resources and appropriately share.

While the sections above highlight the requirements universities need to meet for successful partnerships, there are also requirements of industry partners. In particular, a greater willingness to share risk and to commit resources.

While our research indicates that many industry partners are seeking exploratory research partnerships, universities are unable to guarantee outputs and outcomes when undertaking such research that, by its very nature, is highly experimental with outcomes that cannot be guaranteed. University contributors highlighted that (aside from those in sectors that are R&D-intensive such as technology, aerospace, and health) industry partners may find there is greater investment risk. For the potential of partnerships to be fully realised, industry needs to accept this risk, and greater transparency and awareness must be established when partnership solutions are designed.

This is not only critical for research partnerships. Despite the growing demand for them, professional education and workforce development partnerships are not established 'core business' university offerings[17], and institutions will need to build new capabilities (in some cases 'from scratch') to deliver them. Industry will need to be flexible particularly as the university sector matures its professional education offerings over time to match those of established private providers.

Deloitte's research highlights that, particularly with regard to research partnerships, industry partners' expectations are not always aligned to what a university is able to practically provide. Many industry interview participants indicated that they expect university researchers to be able to operate independently, while university contributors highlighted that industry partners are often reluctant to fund the work of experienced researchers on partnerships – instead choosing to fund PhD or post-doctoral students who require greater oversight.

There is also a need for industry to play a greater role in connecting universities with SMEs to drive partnerships. As evidenced by our survey findings and interviews, SMEs are often unaware of what a university partnership can provide, or have limited capacity to invest in such partnerships, accept risk or commit resources. Various effective government programs exist to connect SMEs with universities including, for example, the CSIRO's Innovation Connections program, which is provided as a case study in this report and the Centre for Crop and Disease Management, established by Grains Research and Development Corporation (GRDC) in partnership with Curtin University[18]. There is a role for industry associations to raise awareness among their members of what universities can provide and introduce mechanisms to establish partnerships on behalf of their members or to enable SMEs to combine resources.

17 While Executive Education is a proven professional education offering, it currently has limited scale, serves a specific and relatively small segment of the workforce, and is a specialism of a sub-set of Australia's universities and their business schools

18 Universities Australia (2020) Clever Collaborations: The Strong Business Case For Partnering With Universities https://www.universitiesaustralia.edu.au/wp-content/uploads/2019/06/Clever-Collaborations-FINAL.pdf.

CSIRO – Innovation connections

Impact	
2,139	Research projects
1,414	Companies
39	Australian universities
35	Publicly funded research organisations
$74.7 M	In grant funding from the Australian Government
$98.2 M	Cash contributions from companies

Partnership focus

The Innovation Connections program helps businesses to understand their innovation and research needs, connect with the research sector and fund collaborative research. Eligible companies access expert advice, as well as financial support through grants and incentives. Delivered by the CSIRO as part of the Entrepreneurs' Programme offered by the Department of Industry, Science, Energy and Resources, it focuses on supporting SMEs to innovate in growth sectors including: advanced manufacturing; food and agribusiness; medical technologies and pharmaceuticals; mining equipment; technology and services; and oil, gas and energy resources.

Partnership model

Partnerships are structured around one of three models:

- **Business researcher placement** – where a researcher from a company works on a research project alongside a researcher from a university or publicly funded research organisation
- **Graduate placement** – where a university graduate or post-graduate is employed by a company to work on an in-house R&D project connected to the university or publicly funded research organisation
- **Researcher placement** – where the university or publicly funded research organisation delivers a research project to a company.

All three partnership models benefit from tailored support including:

- **A dedicated innovation facilitator** – companies are provided with their own dedicated, and free, innovation facilitator to guide them through the research collaboration process, from defining their research needs, identifying a partner, establishing a project, through to successful completion of research
- **A research collaboration roadmap** – providing companies with an entry point into research collaboration and a structured path through their initial research project and beyond
- **Dollar-matched funding** – ensuring projects are important to the business with both parties equally invested in the outcome.

Success factors

Facilitation is a critical enabler of successful partnerships, particularly in research partnerships between universities and SMEs[19].

The role of the innovation facilitator is central to the Innovation Connections model. Facilitators are expert advisers, with deep knowledge of universities in their region, vast academic and business networks, and a unique combination of competencies and experiences across R&D, SMEs and academic research.

Facilitators:

- Bridge the cultural and knowledge gap between SMEs and universities and help foster trust between both parties
- Help SMEs and researchers navigate the administrative and legal complexities of research providing hands-on support with funding, IP and other commercial processes
- Make connections between industry and academia, to help identify the universities and individual researchers with the capabilities required to meet a business's specific research needs. This is particularly important for businesses that have not engaged with universities before and may not know where to begin.

The facilitator "makes things happen". They make research partnership opportunities more accessible and increase the likelihood of success, especially for those SMEs looking to innovate and who might not otherwise have an entry point to research innovation.

19 Verreynne M., Torres de Oliveira R., Mention A.-L. (with contributions from Lay J., Nguyen T., Ferraro S. and Machirori, T.L.) *Enablers and barriers to industry-research collaboration: A small and medium sized enterprise perspective,* CSIRO Australia, 2021.

Queensland University of Technology (QUT) Centre for Future Enterprise and Cisco – Trusted retail and logistics innovation research

Impact

Consumer trust is a concern, and an opportunity, across many industries. Trust literacy, however, is low.

This research partnership will leverage technology to co-develop new trust mechanisms to ensure customers continue to trust retailers in a data-intensive online environment. The QUT/Cisco partnership has expanded ten-fold to a multi-year, global initiative, valued at $3 million that will include a dedicated on-campus Innovation Hub employing graduates for industry projects; a Cisco-funded Chair, post-doctoral fellows and PhD students working with industry partners from the retail and logistics sector.

Partnership focus

QUT is recognised for its close links with industry in teaching and research, and for academic excellence in technology-related disciplines. QUT has partnered with Cisco, a global leader in technology and networking headquartered in Silicon Valley, for many years. The two are engaged in an applied research partnership that examines customer trust, how retail organisations can better use data to drive trust, and the role of technology in building trust given the connectedness of customers. The first phase of the research, which launched to market in April 2021, was informed by input from leading retail and logistics senior executives including 7-Eleven, Coles and Australia Post[20].

This research partnership focuses on the nexus of business and technology, drawing on the opportunity to address growing business needs for effective, more trusted and scalable innovations in digital transformation.
Digital transformation is changing business models, redefining customer experience, and transforming how companies organise themselves and logistics. The aim of this research partnership is to help industries be more adaptive, proactive and resilient with technology disruption. The partnership between Cisco and QUT's Centre for Future Enterprise brings together expertise in technology and industry (Cisco) and domain knowledge and capability in research and innovation (QUT). This collaboration can solve problems quickly and efficiently to create a greater impact economically and socially. The partnership is founded on mutual ambition, contribution from multiple stakeholders, a dedicated academic and engagement team, and co-investment. It is a close collaboration that embeds QUT into Cisco's national Country Digital Acceleration program and National Industry Innovation Network, positioning QUT as the only Queensland university, one of five nationally, and the only global academic partner focused on trust management and digital innovation in the retail and logistics sectors in Cisco's program.

Partnership model

The partnership between QUT and Cisco has evolved over time. Cisco started as a supplier to the university, expanded into student engagement through the Cisco Network Academy, student employment and curriculum development and over the last three years, established the trusted retail and logistics innovation applied research partnership. This partnership spans the three pillars of teaching, research and services. It leverages the established relationships between multiple stakeholders across both organisations and capitalises on the aligned timing of the partnership strategies as both Cisco and QUT are seeking global real-world impact via world-leading research.

While this applied research is commercially focused on its short-term deliverables and a marketing strategy to attract more third partners, it is exploratory in its long-term ambition to establish a new discipline, the management of trust. Both parties co-invest in this partnership, which, as a platform, attracts third parties such as retailers and logistics providers who seek to apply and benefit from the research outcomes. Cisco and QUT have shared goals and processes to drive knowledge outputs, but there is significant flexibility in how the partnership's research outcomes can expand and evolve. At key points in the partnership and influenced by the third parties involved, outputs will impact Cisco's product development and research activity.

20 Trusted Retail Innovation White Paper Released – Centre for Future Enterprise

This flexibility is supported by the rigour in which the partnership is managed and delivered, with both parties working to rapid progress reporting, and the delivery of outputs and regular connections – providing both parties with visibility of the research's direction and results.

The partnership is led by senior stakeholders from both QUT and Cisco to drive its direction and outcomes. The partnership has academic and professional leadership by Professor Michael Rosemann and Gemma Alker from the Centre for Future Enterprise, and direct sponsorship by QUT executives across multiple portfolios including faculty, research services and business development. On the Cisco side, the partnership is led by the ANZ Director, Education and Strategic Industries Reg Johnson, with on the ground leadership from Queensland Regional Manager, Terry Weber.

Success factors

QUT and Cisco's successful partnership can be attributed to three factors. First, both parties share the same vision and ambition about the potential of technological innovation to develop the new domain of trust management. Second, the partnership is founded on commitment across both organisations with the senior leaders of QUT and Cisco (incl. QUT's Vice Chancellor Prof Margaret Sheil AO and Cisco Vice President ANZ Ben Dawson) prioritising the partnership and acknowledging the potential impact of the applied research outcomes. Jointly agreed governance oversees the partnership and ensures that it stays on track and the promised return on research investment is delivered to both parties. Third, the partnership is underpinned by the shared principles of evidence over confidence, market relevance, agility to scale and global impact. This research is but one component of a broader QUT and Cisco partnership, which encompasses teaching, student experience, graduate placements, and other research opportunities including the Cyber Security Cooperative Research Centre.

Both parties acknowledge that there are success metrics specific to each party (e.g. commercial impact and academic papers), but also stress the existence of shared success measures such as proven thought leadership, new applicable research outcomes and global leadership in the fast-growing domain of trusted innovation, with an initial, but not exclusive, focus on the retail and logistics domain.

The Trusted Retail Innovation White Paper was released in April 2022 at a global hybrid industry event. Learn more about Cisco's Country Digital Acceleration program here[21].

The next phase, expands the partnership to a multi-year, global initiative, valued at $3 million, which includes a dedicated on-campus hub, Innovation Central Brisbane, employing graduates for industry projects and a Cisco-funded Research Chair, postdoctoral research fellow and PhD students working with industry partners from the retail and logistics sector.

21 https://www.cisco.com/c/m/en_au/cda.html

Section 4

What can universities do to realise the potential of partnerships?

Our research shows that there are actions that universities can take to build partnerships that deliver innovative solutions. In this section, we explore these actions.

Existing industry relationships hold the key to creating broad and reciprocal partnerships that can be extended and expanded.

As highlighted in section 2, there is strong demand from industry for multi-faceted partnerships. Broad and strategic partnerships not only hold financial benefits for universities, but they also establish reciprocity, which encourages industry partners to accept risk and commit resources to the partnership.

Research participants highlighted two common perceptions about broad partnerships:

1. They are difficult to establish as it is challenging to connect and coordinate points of contact across both organisations.
2. They are mostly confined to partnerships between universities and large corporate enterprises – particularly in sectors that have established R&D capabilities (such as technology and medical science), and industry organisations that have dedicated university partnership managers.

However, there is strong demand from both large organisations and SMEs for multi-faceted partnerships. Many of the organisations interviewed, and those surveyed who currently partner with universities, *already* have multi-dimensional partnerships – even among SME contributors to our research (many of whom are partnering on research and work integrated learning or graduate recruitment alongside).

Our interview findings indicate that many industry organisations target existing university partners, ordinarily in student recruitment or work-integrated learning. There is a significant opportunity for universities to build on existing partnerships:

1. Universities are likely to have significant and 'untapped' potential for broader partnerships across their existing industry relationships – the key is to treat these relationships as foundations for broader partnerships, even where they represent discrete one-to-one collaborations.
2. The most common partnerships are likely to be in areas where industry benefits significantly, where reciprocity can be fostered with minimal or very targeted university investment, such as student recruitment and commercial relationships where the organisation is a supplier to the university.

Although most institutions have invested in relationship management resources and systems to create a 360-degree view of industry partners, it is now more common for university procurement terms to require broader engagement from suppliers (particularly in large contracts and with regard to work-integrated learning). There are a range of additional tangible actions that universities can take to expand and extend existing partnerships.

A greater focus on industry needs and relationships in student recruitment and work-integrated learning can create a platform for broader partnerships.

The most common *relationships* between universities and industry are those concerning student recruitment, work-integrated learning (WIL), and those where an industry organisation is a supplier to the university. These are areas that few may consider to be partnerships, in the truest sense of the word, but they have strong potential to form a foundation for broader collaboration and connection:

1. Student recruitment and WIL relationships are often in areas where the industry partner values and recognises an institution's academic strength, the same academic strengths that are a critical industry pre-requisite for education and research partnerships.
2. Depending on the scale and nature of the supplier relationship, leaders of industry organisations that supply a university may have a vested interest in the relationship.
3. In both these areas, and not withstanding universities' interest to drive graduate employability, industry benefits significantly from its relationship with the university. They are strong bases from which to establish or emphasise reciprocity, and to encourage industry to invest, accept risk, and commit resources.

To build from these types of collaborations, it is important for universities to:

1. Create meaningful channels of feedback and collaboration in student recruitment and WIL. This helps universities to improve their student experience and services and also create more meaningful connections with industry representatives. Open channels concerning graduate skills can also feed directly into the development of more effective 'work-ready' curricula and professional education offerings. Industry representatives that manage graduate recruitment are likely to be part of HR, People or Talent functions that are potential 'customers' for workforce development partnership offerings. Examples provided by interview participants to strengthen engagement in these areas include:
    a. Regular checkpoints between industry graduate recruiters and university careers advisers and program leaders to discuss graduate skills gaps
    b. Universities taking a more active role in the design and promotion of careers fairs and WIL opportunities to steer students towards industry partners (moving from students 'opting in')
    c. The sharing of information with industry to identify new employment pathways for graduates (for example, to recruit students who may not complete their studies).
2. Focus on building relationships and connections, not 'up selling'. Almost all industry contributors to our research highlighted that broad partnerships are built from personal connections and through strong individual advocates within the industry organisation. University activity that is perceived to be 'selling' can be a barrier to the extension or expansion of a partnership.

These industry relationships are a starting point for building bi-directional, collaborative relationships that create advocates who recognise the value provided by the university. In essence, to foster these relationships and connections so that they *begin to resemble partnerships*.

Expand and extend industry relationships into areas that drive stronger connections and mutual benefits, but which require limited investment.

Student recruitment, WIL and supplier relationships are unlikely to build straight into an applied research or workforce development partnership. Instead, universities should harness these relationships to create partnerships in other areas that more strongly connect the two parties.

The greatest opportunities are in diversity, inclusion, and sustainability and in connections across university and industry workforces. These are areas where stronger alignment of culture and values will be created.

Many industry organisations and universities have strategic priorities concerning diversity and inclusion. Almost half of the survey respondents indicated that diversity and inclusion would be a critical priority and issue for their organisation in the next two to three years, and often with shared goals and with similar investments being made, for example in scholarships for disadvantaged students. A number of interview participants stated that their organisation was funding scholarships for students, but not in partnership with universities. There are clear opportunities to build partnerships that can evolve from graduate recruitment and WIL relationships, and from there to other areas focused on social license such as sustainability research.

The other important opportunity to connect and integrate industry organisations and universities is in partnerships that create exchange opportunities across the workforce including:

- Early career researchers and HDR students spending more time in industry
- A more coordinated response to guest lecturers and industry curriculum input
- Industry input into careers functions – in particular to enhance services that focus on the work readiness of graduates, such as interview preparation and soft skills, and particularly for students from diverse backgrounds and/or students who may require more support to transition into the workforce.

These arrangements are usually discrete one-to-one connections – frequently at a school or program level – and there is an opportunity for a more systematic and coordinated approach. Industry guest lecturers, industry curriculum input, and teaching placements for industry representatives are also a foundation for more substantial education-focused partnerships to support industry workforce and talent priorities and to drive quality, particularly concerning student work-readiness and outcomes. Exchanges in the other direction (where academic staff and HDR students spend time in industry) will increase the industry relevance of teaching and research, while also increasing industry experience and exposure across the academy (see Section 3).

Figure 5: Dimensions of industry partnerships and how to build them

Dimensions of industry partnerships and how to build them

Establishing reciprocal relationships

Our research shows that reciprocal partnerships expand and extend – they also lead to partnerships where there is greater appetite for exploratory research. Focusing here builds a solid base and reflects things universities already do.

Graduate and postgraduate employment

- Effectiveness reduced through COVID-19 and the move to digital
- Universities can do more to promote careers events to students, and beyond the careers function, to drive engagement
- Students require more exposure to, and coaching in, industry 'ways of working' from careers advisers
- Focusing beyond graduates and share information – industry may also hire students who don't complete their studies.

Suppliers as partners

- Suppliers are often strong candidates to become partners
- Many long-term strategic partnerships originate in commercial relationships
- Industry partners who are also suppliers have 'skin in the game', and there is the potential for them to have a greater appetite for risk when seeking to partner – particularly in research and innovation in fields where results are not guaranteed.

Strengthening connections and collaboration

The strongest partnerships are based on personal relationships, and shared understanding and values. These are areas of growing industry demand where institutions can build connections. Minimal investment is required if partners can align on goals and pool their combined (existing) resources.

Social license

- Industry and universities often have closely aligned goals concerning diversity, inclusion, equity and sustainability
- Both parties are investing, but there is significant potential for partnerships that pool resources. For example, moving from separate scholarship programs to partnerships that offer scholarship, mentoring, WIL and a guaranteed employment outcome.

Industry-integrated experiences

- Moving beyond WIL: embedding mandatory industry experience in the pathways of early career academics and HDR students to build industry exposure, connections and an understanding of how to work with industry
- Creating mechanisms to bring industry, students and academics together for exposure – whether through physical spaces, advisory boards, teaching placements for industry, or other means.

Driving mutual strategic benefits

Our research shows strong industry demand here, but the conditions must be right. This is where revenue is generated – whether through one-off collaborations or long-term strategic partnerships. For industry to accept risk here, reciprocity, relationships and aligned ways of working are a prerequisite.

Professional learning and development

- Based on Deloitte's research, talent-related offerings will be an area of increasing industry demand, particularly in workforce and leadership development
- The ability for universities to develop tailored educational offerings, that are continuously refreshed and updated is key here
- 'Packaged courseware' solutions are not what industry is seeking – the focus here needs to be on bespoke, co-developed content.

Research and innovation

- Innovation and domestic product development is an economic imperative for Australia, and a priority for Australian industries
- Demand reflects both one-off specific research projects, and broader long-term exploratory partnerships
- Collaborative, multi-disciplinary, solution design capabilities will be key, as will an industry appetite for risk where research outcomes will be difficult to guarantee.

What is the opportunity?

Adopt new models of business development, industry engagement and partnerships delivery.

Our research points to an opportunity for universities to adopt new, or stronger, models of business development and industry engagement to drive industry partnerships. In particular, for business development and industry engagement *functions* that:

- Establish and manage partnerships relating to education and student experience, as well as research
- Facilitate connections between industry and the right areas of the university, including connecting faculties for multi-disciplinary partnerships
- Navigate and manage university systems and processes, helping to simplify IP, contractual and commercialisation agreements across both parties, and project managing university partnerships with industry
- Bring deep and specialist expertise to identify and interpret unique industry challenges, and shape and influence bespoke services and solutions that meet industry needs
- Have strong connections with the rest of the university – including strong individual networks and relationships across faculties, schools and professional portfolios/functions – combined with excellent knowledge of 'how the university works', and the institutions' academic strengths and capabilities
- Can tailor the way that they engage with partners to enable collaboration with SMEs, large organisations in R&D-intensive sectors, and large organisations in other sectors.

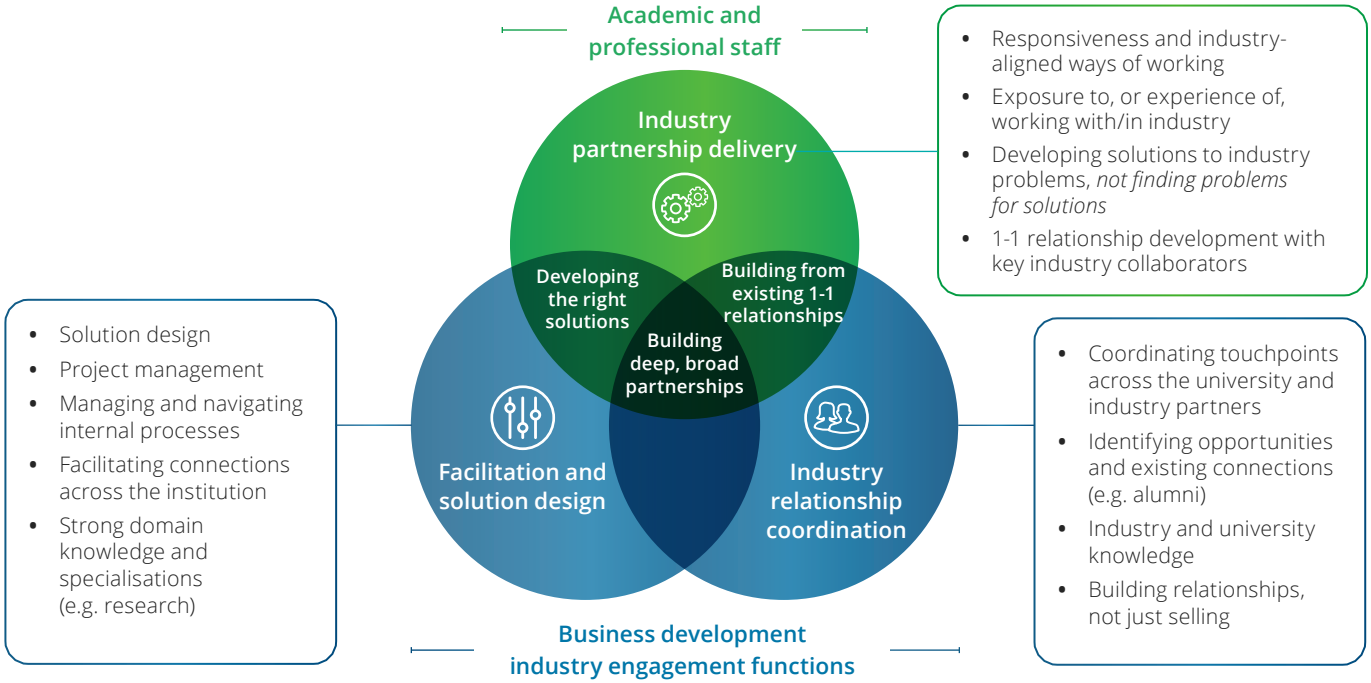
The best model of business development and engagement is one that is an effective 'connector' of industry and the university, and which can manage processes, reduce 'red tape', and shape solutions for industry on behalf of the university. However, the right model does not rely entirely on business development and industry engagement *functions* – it is also crucial that those who are designing and delivering services and solutions to industry are well aligned to partners' needs. Our research points to a model with three 'core' capabilities, as highlighted by Figure 6 overleaf.

Our research points to an opportunity for universities to adopt new, or stronger, models of business development and industry engagement to drive industry partnerships.

These capabilities are in line with models that many universities have implemented, in full or in part, to drive business development and collaboration and, as the case studies within this report demonstrate, with evidence of success in many institutions. However, our research points to a need to:

1. Expand these models – moving from individual centres or faculties to whole-of-university models
2. Target investment in the right resources – moving from larger teams of less senior resources to smaller, discipline focused teams of experienced and senior specialists
3. Provide authority and autonomy to these teams – empowering them to manage university processes, to project manage university resources, and mobilise academic and professional teams.

Figure 6: Key business development and industry engagement capabilities



Core capability 1: Industry partnership delivery

This capability reflects the academic and professional staff, and students, that deliver services and solutions to industry partners, including researchers, HDR students, learning designers, program coordinators and leads (and other teaching-focused academics), and careers advisers. Where universities seek to build broader partnerships with suppliers, procurement also falls into this capability.

Most industry participants indicated that the strength of relationships with individual academic or professional staff (outside the business development/industry engagement functions) was the key to successful partnerships and that these relationships were strongest with academic and professional staff who understood the industry partner organisation, and who had often spent time in industry themselves.

Recognising that these personal relationships are critical, there is an opportunity for universities to:

- Drive increased industry exposure across the academy (including teaching-intensive academics), and targeted areas of the professional workforce (such as careers advisers) to better understand what industry needs and wants, and to support aligned ways of working. Factors such as responsiveness to industry contact and communication (including very specific examples such as running effective meetings), and the soft skills and behaviours needed to build long-term and reciprocal professional relationships with industry are critical to the effectiveness of partnerships.
- Provide enhanced support and incentives, particularly for early-career academics, to encourage working with industry. While many universities are orientating their academic career frameworks to emphasise the importance of industry collaboration and alignment, there are opportunities to adjust recognition systems so that work with industry is recognised in line with

publications and student teaching activity. This is particularly important if universities are to harness the education-focused opportunity to support industry workforce learning and development. Mentoring for early-career academics by 'exemplars' in the academy who work with industry, and encouragement for academics to hold advisory positions in industry alongside their academic work (as is common in Europe and the US), were other opportunities highlighted by both industry and universities.

These mechanisms will support industry partnerships, contribute to the work-readiness of students, and to the development of early career researchers, which are priorities for many institutions.

Core capability 2: Industry relationship coordination

This capability usually lies with an institution's business development or industry engagement function and concerns how connections with industry are managed across the university. As highlighted in Section 3, universities can benefit by expanding their existing relationships, ensuring that such coordination activity does not undermine these individual relationships.

This capability is about more than 'relationship managers' or the use of a customer relationship management system, which almost all universities have in some shape or form. It is about nurturing connections and making new ones: moving from many unconnected one-to-one relationships to many one-to-one relationships that can be built upon – extending opportunities across faculties and expanding from one type of partnership into others. This requires:

- Relationship managers and coordinators with strong relationships across the academy and in areas such as alumni, philanthropy and advancement. Given the scale of institutions, the right model is likely one of partner or sector focus. This enables relationship managers to work across a smaller number of aligned disciplines, faculties, schools and institutes (for example, health-sector focused relationship managers would likely need strong connections with medical science, technology and engineering faculties and schools) and to connect industry partners with the most appropriate academics – including when a multi-disciplinary approach is required.
- The ability to understand and navigate the industry partner organisation and build relationships across it, as well as the university. This includes an understanding of the criticality of having the right skills, experience and behaviours in place to build effective long-term and reciprocal professional relationships. Universities' resources will have to make connections with a number of industry organisation verticals including product development, innovation and (increasingly importantly) human resources.
- A focus on trust, connection and opportunity identification rather than 'selling'. Many industry contributors emphasised this distinction – describing the most effective university partners as those where they had a single point of contact, with whom they had a strong relationship, and where they were able to understand their challenges and connect them to the right people across the institution. In many instances, contributors were describing relationships with senior academics that operated in this way, but as universities look to build broad partnerships that can scale, this will become an essential role of central industry engagement teams.
- Establishing roles and teams that can operate as the 'front door' or 'brand' of the university, particularly when targeting relationships and partnerships with SMEs who may struggle to identify the right initial point of contact. Such roles require experienced and highly knowledgeable resources with a deep understanding of the institutions' strengths, and who can be trusted to represent and promote the university when engaging with external stakeholders (for example, engaging with local Chambers of Commerce) and prospective industry partners.

This requires experienced professionals with the knowledge and skills to genuinely connect with industry stakeholders, and engage with (and build the trust of) senior leaders in industry and the institution. For many universities, establishing these capabilities requires investment at a time when institutions are financially constrained. Universities should target this investment to support partners or sectors that are aligned to academic strengths or local needs – reducing the scale of investment, while also focusing it in the areas where partnership returns are most likely to be realised.

The most effective university partners had a single point of contact, with whom they had a strong relationship, and where they were able to understand their challenges and connect them to the right people across the institution.

Core capability 3: Facilitation and solution design

This capability holds the key to many of the characteristics of successful partnerships as outlined in Section 3. It is a core capability of an effective business development and industry engagement function and focuses on solution design and the management of the partnership process, rather than relationships between the university and its industry partners.

This capability, which was highlighted as uncommon by many industry and university contributors to Deloitte's research, reflects the following critical dimensions:

- Facilitating the design of bespoke solutions for industry partners requires a strong understanding of industry partner needs and of the institution's inherent strengths and capabilities. This encompasses the ability to bring the right industry and university stakeholders together, the ability to design and facilitate processes (such as structured workshops to develop proposals for businesses) to design solutions and agree shared goals and objectives, and the ability to support solution design. This addresses the perception that 'industry does not always know what it wants', and leads to the tailored solutions that industry values.
- Designing bespoke partnership delivery approaches that enable risk to be monitored and managed, for example in exploratory research, and which bring partners together to achieve shared outcomes and goals. This requires designing partnership delivery mechanisms that are tailored to the partnership's focus, and how each party will need to collaborate and engage with one another. This may range from straight-forward arrangements where the university is fully responsible for the delivery of outcomes, through to joint-team constructs and shared infrastructure, and sprint-based flexible collaboration that enables the direction of the partnership to be constantly assessed and adjusted based on progress against outcomes.
- Project management to ensure that partnership outcomes are delivered quickly, and goals and objectives are delivered – in essence, to ensure that the partnership is delivered and managed in a way that is aligned to industry expectations. This includes the management of internal university processes (such as IP and legal), and requires resources that improve the experience of industry partners. Tracking, monitoring and evaluating progress against shared goals and objectives across both parties and creating transparency for industry partners is also a key aspect of this dimension.
- Facilitating connections across the institution when a partnership is in place, and particularly during the solution design process with industry partners. This focuses on bringing in the right academic and professional staff to ensure that industry outcomes are achieved, and internal processes are managed. Examples include working with faculty and school leaders to mobilise teaching-focused academics for industry education partnerships, or to build the right team of researchers to support an applied research project.

This capability requires experienced and empowered professional resources and is most viable when focused on a specific focus or discipline. The difference between this capability and relationship coordination is the level of discipline and domain knowledge that is required to facilitate partnerships and design solutions. It requires very strong connections with faculties and schools and significant knowledge of research or education. This capability can be established centrally *or* embedded in faculties or schools, provided that the chosen model supports multi-disciplinary partnerships in key areas.

The University of Sydney – The Knowledge Hub

Impact

Supporting and promoting a culture of research commercialisation

Driving research collaboration with SMEs

Connecting students with work integrated learning opportunities with innovative start-ups in emerging sectors

The Sydney Knowledge Hub focus

The University of Sydney is Australia's oldest and one of its most prestigious universities. Established in 1850, it consistently ranks among the world's top 50 universities, and is widely regarded for excellence in teaching, learning and research. The Sydney Knowledge Hub (the Knowledge Hub), run by the University of Sydney and part of its broader industry engagement ecosystem, is an innovative collaboration and coworking space that connects start-ups, non-profit organisations, and SMEs with the researchers, students, knowledge, and facilities of the university.

The Knowledge Hub is more than a 'standard' innovation hub or coworking space. It is focused on supporting organisations to establish or deepen a collaboration with the university and is supported by a dedicated team who build connections between member organisations and the academy. Its goal is to facilitate engagement with industry to improve commercialisation outcomes.

The Knowledge Hub model

The Knowledge Hub is a model of collaboration and support that brings the benefits of the campus to industry. Industry partners, led by university researchers, are *members* of the Knowledge Hub, which comes with many benefits. Each member organisation is selected for its potential for meaningful engagement with the institution, and that engagement is supported by representatives from across the university. Industry members have access to the Knowledge Hub coworking spaces, lab facilities, grant support, and the expertise of the academy. The Knowledge Hub works across academic disciplines to drive multi-disciplinary partnerships, such as digital health, advanced manufacturing, or circular economy.

The Knowledge Hub and its team also provide support and benefits to potential and current research entrepreneurs at the university (who may not be members). Through the Knowledge Hub, the university researchers are supported to engage with industry – building their understanding, both of the cultural requirements of effective industry engagement, and of the motivations and priorities of industry when collaborating with universities and academics.

The Knowledge Hub is led by a team with a high level of autonomy and is able to adapt to the needs of the university. The team has three roles: first, to connect industry with the right university stakeholders and facilities to establish commercialisation partnerships; second, to play host to research commercialisation and industry engagement activities and maintain a visible space for this within the university; and third, to support researchers on their entrepreneurship journey. The team is highly networked within the university including with the research commercialisation teams and faculty-based business development leads. The team plays a key role in the creation of a commercialisation pipeline for the university through the attraction of new industry members.

Partnership success factors

The success of the Knowledge Hub can be attributed to three factors, the first of which is the physical space. The vibrant, multi-purpose, space is designed to facilitate connections and relationships bringing stakeholders from across the university to the Knowledge Hub to engage with industry members – for example, through events. The Knowledge Hub's physical space is also a very visible symbol of the university's commitment to research commercialisation and engagement with the start-up and SME communities.

The second success factor is the Knowledge Hub team's highly collaborative ways of working within the university to build successful external relationships with start-ups and SMEs. The team has experience working with, and within, the start-up scene and is focused on building strong external relationships across this sector. The thing that helps convert those relationships into engagement opportunities is the team's collaboration with the rest of the university; in particular, the way the team exploits existing relationships with industry by working collaboratively with the university engagement and commercialisation teams to build on existing connections and bring new organisations into the Hub.

The third success factor is the Hub team's ability to build long-lasting engagement with member organisations and create a strong sense of community. The team can introduce members to collaboration opportunities across the university, beyond 'point in time' revenue opportunities, to enable long-term applied research and commercialisation outcomes.

Section 5

What can governments and industry do to realise the potential of partnerships?

Government

Both State and Federal Governments are taking measures to incentivise innovation to support and incentivise the role of higher education.

In October 2020, the Federal Budget's $1 billion Research Support Package provided a funding injection to universities and signalled that the Government's innovation agenda would play a key role in support for the sector in its COVID-19 recovery path. The scheme reiterates that the Government's priorities for the sector will be domestic opportunities, including through research translation, commercialisation and partnerships with industry.

State Governments are also investing in research commercialisation schemes. The Breakthrough Victoria Fund will drive investment in research, innovation and commercialisation with a $2 billion investment over 10 years, centred around Victoria's key innovation and employment precincts[22]; while the South Australia' Government's Defence Innovation Partnership will support collaborative defence and space research and development projects to provide solutions for complex defence challenges, involving the three South Australian universities.[23] In Queensland the Advance Queensland program has an additional $10 million for a new innovation action plan and $17 million to accelerate university commercialisation and priority industry science centres [24].

Other Federal funding schemes also support research linkages between university and industry. The Australian Research Council (ARC) Industrial Transformation Research Program (ITRP) offers a suite of funding schemes to both support research hubs and training centres commence operations, and to enable researchers to gain real-world practical skills and experience through placement in industry.[25] $74 million in funding announced in July 2021 targeted 16 new research hubs and training centres, to strengthen research and industry connections in sectors including energy, biomedical technology and agriculture.[26]

Alongside the schemes which support research translation and commercialisation, there is considerable support for workforce development for those employed by industry. Governments are focused on both work readiness of graduates alongside reskilling/upskilling and view connections with industry as a critical part of both.

For example, throughout COVID-19 and with Government support, universities offered short-form graduate certificates to support future workers who had been made redundant by encouraging them to gain new skills in key skill shortage areas and at no cost, thereby building a new pipeline of talent.

And as our case studies demonstrated, many universities are already working with industry to scale workforce development and support industry to source talent pipelines through micro-credentials that are bespoke and targeted.

These types of collaborations will no doubt result in stronger industry connections that can scale into workforce development and support industry to source talent pipelines in other ways.

The University-Industry Collaboration in Teaching and Learning Review recommended that there were opportunities to improve work-integrated learning and options to count work experience as credit towards micro-credentials. They also indicated that there should be more opportunities to combine work, study and ongoing skills development and that a flexible higher education cadetship program, which might combine an employment contract and a learning program, could be considered. This would require reforms to curriculum, teaching methods and assessment models and ways to enhance pathways between schools, VET, higher education and industry[27].

22 Victorian Government, *Breakthrough Fund Victoria,* https://www.vic.gov.au/breakthrough-victoria-fund.

23 Government of South Australia *Budget to cement SA as the Defence and Space State* (Media Release, June 2021) https://www.defenceinnovationpartnership.com/media/budget-to-cement-sa-as-the-defence-and-space-state/.

24 https://advance.qld.gov.au

25 Australian Research Council (6 August 2021) *Industrial Transformation Research Program* https://www.arc.gov.au/funding-research/funding-schemes/linkage-program/industrial-transformation-research-program/industrial-transformation-research-hubs

26 The Hon Alan Tudge MP (21 July 2021), *$74 million to bring Australian research and industry together* (media release) https://ministers.dese.gov.au/tudge/74-million-bring-australian-research-and-industry-together

27 https://www.dese.gov.au/higher-education-reviews-and-consultations/university-industry-collaboration-teaching-learning-review

The proposed short-term actions included the delivery of industry-focused micro-credentials – accelerated through a new Government targeted investment fund. These micro-credentials would target key skills shortage areas and be led by industry. It was proposed that a unified credentials platform to surface current and emerging skills shortages, along with provider guidance to enable informed learning decisions for consumers, would act as a bridge to labour market opportunities.

In 2021, the Government also linked performance funding to the National Priorities and Industry Linkage Fund (NPILF) and the National Strategy on Work-Integrated Learning[28].

There are opportunities for Government to better align incentives for university collaboration and to invest strategically in partnerships in areas of national priority. While progress has been made to improve the incentives for, and prevalence of, partnerships between universities and industry, more can be done to encourage greater collaboration. Incentivisation can be achieved by drawing on the different levers available to government including funding, regulation and legislation, outcomes measurement and key policy frameworks.

As universities recover from the impacts of COVID-19 there is an increasing focus on the identification and pursuit of revenue sources to support diversification of the sector's revenue base. Research commercialisation opportunities are a potential element of this, including opportunities provided through the research commercialisation scheme, Australia's Economic Accelerator. There are opportunities for greater alignment with, and reward for, partnerships between universities and industry, both within the core model of block and grant funding, and specific programs and initiatives (including at a state and territory level) like the Economic Accelerator. Such models need to go beyond capital injection to enhance the commercial acumen of university researchers and build connections to better enable effective research translation to industry.

Given the value to graduate outcomes of work-integrated learning (WIL) and general work experience to graduate outcomes, there is an opportunity for government to better collate evidence on the prevalence and quality of this activity across the higher education sector, including when assessing and reporting on outcomes for students.

This evidence base could help improve student choice and guide research on the drivers of graduate labour market outcomes across the sector. It could help advise universities and industry on the features of effective models of WIL and encourage its adoption across the system, especially outside areas where work placements have been traditionally undertaken (e.g. health and education).

As part of the ongoing process of review and revision of the Australian Qualifications Network (AQF), consideration must be given to the potential creation of an 'open access national skills taxonomy' through the Australian Skills Classification, that better integrates micro-credentials and breaks down barriers between the VET and higher education systems. This will also better enable effective collaboration between universities and industry to meet emerging skills demands.

As noted earlier, the recent Review of University-Industry Collaboration in Teaching and Learning concluded that "all Australian governments should expedite the work to update the AQF as a foundation of a tertiary education system aligned to the future needs of lifelong learners, and a fundamental driver of tertiary policy and collaboration in Australia's education and training system."[29]

This call to action sits alongside broader reforms to tertiary education in Australia. The introduction of new industry clusters, for example, will govern the development of nationally recognised VET qualifications to support greater collaboration across sectors of the economy to drive improved training outcomes and greater interoperability of skills.

Industry

Industry also needs to provide leadership and accept joint responsibility alongside universities for developing deep and strong enabling partnerships

Beyond government funding and incentivisation schemes for pure research, research translation and commercialisation and reforms in learning and teaching, the research that Deloitte conducted has highlighted that there are ways in which industry can help in leading stronger industry university partnerships.

28 https://www.dese.gov.au/higher-education-reviews-and-consultations/university-industry-collaboration-teaching-learning-review
29 https://www.dese.gov.au/higher-education-reviews-and-consultations/university-industry-collaboration-teaching-learning-review

Industry has a responsibility to support both the skills agenda, knowledge generation and innovation alongside our universities. There is likely to be some similarity between the core capabilities required by both parties.

Capability 1. Strategy, relationship building and engagement

Much public discourse has focused on the 'work readiness' of graduates, and the contribution of our institutions to the skills agenda. While this scrutiny has been largely directed towards the higher education sector, there is a critical role for industry to play too.

For universities to produce truly work ready graduates, industry must continuously inform institutions of their skills needs. These needs are not only changing and evolving in the face of technology disruption; they vary widely across industry. In particular, our research highlights particular differences in the needs of smaller organisations and large enterprises concerning graduates' skills. The need for industry to inform and engage with institutions to shape graduates' skills goes beyond industry advisory boards – requiring ongoing and broad dialogue, and time commitment from industry. In degree fields that are pathways to accredited occupations, this role is often filled by professional bodies; most of whom are heavily engaged with universities and academics to inform curricula, with resources dedicated to this.

Also, it is important to recognise that the skills agenda is not our universities' only role: they are generators of knowledge; crucial to local communities; and, as public institutions, offer opportunities for the transformation of society. It is important that industry recognises this, and the prospects for strategic partnerships that universities present.

Strategy is key to many of these prospects. Considering and building university partnerships into relevant aspects of organisational strategy such as talent acquisition, workforce development, community engagement, Environmental Social and Governance and innovation will be a crucial enabler of successful outcomes. In particular, organisations should explore where universities can support strategic priorities, how connections can be built and resources allocated to university partnerships, and how they can build university partners' knowledge of their business and culture.

Capability 2. Reciprocity and knowledge of the sector

Reciprocity and knowledge of the sector is key to mutual advantage for the rationale to establish relationships and partnerships into the higher education sector. If industry had a deeper understanding of how the sector operates, how universities are funded and the performance requirements at both federal and state levels, industry could become partners who can assist universities to achieve those goals and drivers.

It is critical that industry learn how R&D works pragmatically within a university and broadly if there are to be research collaborations in sectors that aren't 'traditionally' R&D focused. Our research demonstrated that there were differences in the views of industry interviewees from R&D intensive sectors (technology, health/pharmaceuticals) and those from other sectors (financial services etc.). Those with R&D arms understand the challenges university researchers faced, and were willing to invest time and accept a level of risk – those without didn't seem as inclined.

Therefore, driving mutual goals through a deeper more considered understanding and knowledge of the sector is critical for operating within the cultures and ways of working represented in universities. This would support the identification of strengths and innovation opportunities that are mutually sustaining and critical to both parties.

Capability 3. Resourcing

No discussion of how industry can work effectively with universities can be deemed comprehensive without consideration of the financial model that underpins it, and an understanding of how endeavours should be resourced and returns appropriately shared. And, while many industries are service industries and indeed provide services to the sector, a reverse argument can be had. As not for profit organisations, universities are at times at odds with commercially driven industry requirements and this needs to be both understood and recognised.

In terms of reciprocal investment in R&D, workforce enablement, research, commercialisation, advisory boards, sponsorship, scholarships, codesign curriculum and/or other products among so many options, consideration needs to be given to the business models to support this work. In some other global economies the notion of giving is far more advanced and seen as critical to the development of a strong university that can respond to the communities within which they reside.

Section 6

What does good look like?

Based on our research, Deloitte has developed a maturity model for universities and a set of key considerations for industry to assess their current capabilities and readiness for effective industry partnerships at scale.

Much of the discussion so far has outlined the challenges and opportunities for these stakeholders and while each university, industry, and government (Federal or State) is situated within a unique context, there are aspects to incentivising, resourcing, developing, and maintaining relationships and deep collaborations that have similarity across all three.

Our research presents a range of factors that, when combined, produce successful outcomes – as has been demonstrated in several of the case studies within this report. 'What good looks like' is apparent both in these examples and across many universities and industries.

Government, industry and universities have opportunities to work productively together to enhance Australia's prosperity if these factors can be achieved to distinction. Universities should consider a whole of university approach to business needs and be aware that ways of working need to be adequately aligned to industry's expectations.

Equally, industry must be more understanding of university operations and appreciate the unique culture found in a knowledge generating organisation.

University Maturity Model

Our considerations start with the University Maturity Model which is structured around three core capability areas:

1. University-industry partnership capabilities,
2. Industry relationship coordination, and
3. Facilitation and solution design.

Each capability is supported by a set of more specific requirements or "factors", as we have named them here, which individually can be assessed and considered but collectively will contribute to an overall level of maturity. It is highly likely that some factors will be more developed than others and present an opportunity for focus.

Factors

The factors that contribute to the maturity model are listed in the table overleaf. The factors impacting maturity and good practice are many but broadly include: an institution's strategy and vision; culture; the business model; supporting functions such as a single point of entry and contact and other enabling capabilities such as business development and relationship managers; and the 'play book' of options for what universities and industry can do together.

Factors impacting maturity and good practice

Capabilities		
1. University partnership delivery capabilities	**2. Relationship coordination**	**3. Facilitation and solution design**
Factors		
• Clarity of vision • Executive leadership and buy-in • Strategy linked to learning, teaching and research • Business model • Operational plan • Industry capability senior leadership, business unit function • Systems • Processes • Communications and engagement	• A clear way to contact the university • A 'playbook' of potential offerings for industry • A single point of contact for client industry engagement and relationship management • Entrepreneurial, research and development, workforce/skills, curriculum, development and commercial mindset • Culture that is characterised by: – aligned ways of working – risk management – agility and flexibility – timeliness, pace and responsiveness – incentives for workforce – revenue distribution	• Products and delivery playbook • Co-design for translating industry needs • Formalised teams and project methods • Roles, responsibilities, accountabilities clearly stated and understood • Project management, coordinating resources • Incubators for innovation and solution design with industry

Maturity dimensions

In the university maturity model, overall capability can be evaluated against a scale of *Developing, Basic, Progressing, Advanced, and Market-leading* to achieve one of the maturity ratings.

Figure 7: Industry partnership maturity model dimensions

The maturity model enables universities to proactively engage and reflect on opportunity areas while setting aspirations for future development. We recommend exploring the three factors that drive good university practice – partnership delivery, relationships coordination, and facilitation and solution design- to identify where investments, initiatives or adjustments will drive the greatest maturity uplift.

Industry considerations

Accompanying the university maturity model are the three core capabilities required of industry, which were discussed in Chapter 5 of this report. While the capabilities that industry requires differ from those required by universities, they can be described using a similar maturity model framework. This is shown below, with the maturity scale reflecting that shown earlier.

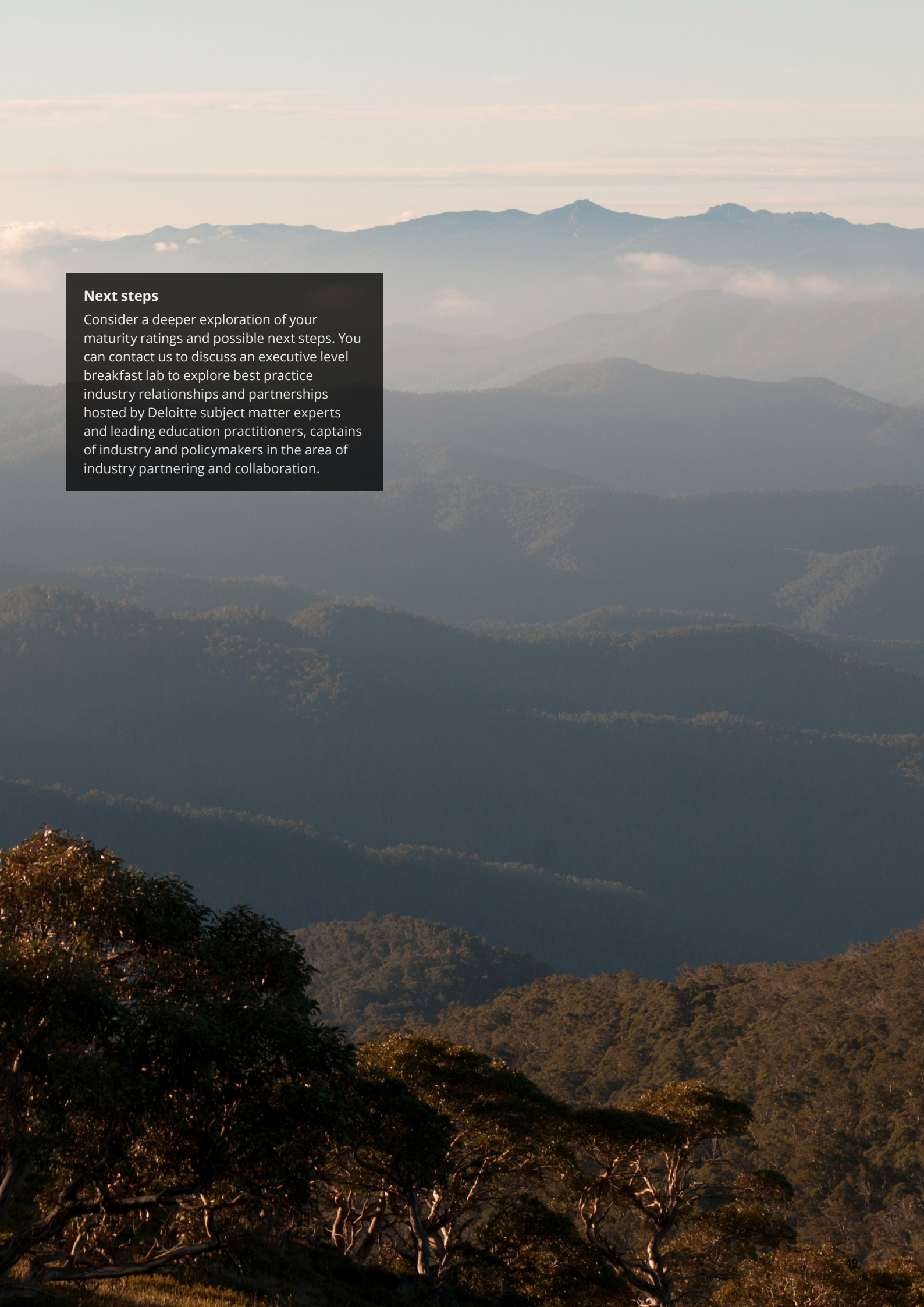
Core industry capabilities

1. Strategy, relationship building and engagement
2. Reciprocity and knowledge of the sector
3. Investment

Core capabilities factors

Industry may reflect on where they are placed on the following scale across each capability to identify the opportunities to advance partnering.

Capabilities	Developing	Basic	Progressing	Advanced	Market leading
Strategy, relationship building and engagement (e.g. engagement, student, research, innovation)	Industry partner has no formalised strategy but some relationships with individuals across various university areas.	Industry has a basic strategy and is targeting universities to explore opportunities.	A purposeful strategy is in place, with a likely focus in student engagement and potentially research, and key university partners are known and deeply engaged.	Co-locating and involving university partners in key problem identification and solutions.	Supporting and enabling universities to achieve their mission while achieving important outcomes and impact for society.
Reciprocity and knowledge of the sector	Has a minimal understanding of the sector but some engagement.	Fundamental knowledge of how universities operate and their drivers.	A good grasp of university drivers and ways of working for mutual benefit.	Industry is engaging with universities by co- creating solutions and sharing risk.	Innovation opportunities emerge that are mutually sustaining and critical to both parties.
Resourcing (e.g. dedicated resourcing for university partnership activity, with governance in place to support critical partnership processes, and allocated investment)	Industry has some resourcing in universities.	Industry allocates resources purposefully against its strategy and ways of working with universities to achieve mutual goals.	Industry and university partners have coherent pathways for understanding resourcing and its benefits.	Resourcing is mutually beneficial to advancing, leading and innovative problem solving.	Industry recognises the benefits of investing resources to support broader societal economic impact with dedicated alliances and operating unit.



Next steps

Consider a deeper exploration of your maturity ratings and possible next steps. You can contact us to discuss an executive level breakfast lab to explore best practice industry relationships and partnerships hosted by Deloitte subject matter experts and leading education practitioners, captains of industry and policymakers in the area of industry partnering and collaboration.

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